MITSUBISHI

GRAPHIC OPERATION TERMINAL
GOT

GRAPHIC OPERATION TERMINAL

GOT1000

GT15 User's Manual

● SAFETY PRECAUTIONS ●

(Always read these precautions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.
The precautions given in this manual are concerned with this product.
In this manual, the safety precautions are ranked as "DANGER" and "CAUTION".

DANGER	**Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.**
CAUTION	**Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.**

Note that the CAUTION level may lead to a serious accident according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[DESIGN PRECAUTIONS]

DANGER

- Some failures of the GOT, communication unit or cable may keep the outputs on or off.
  An external monitoring circuit should be provided to check for output signals which may lead to a serious accident.
  Not doing so can cause an accident due to false output or malfunction.
- If a communication fault (including cable disconnection) occurs during monitoring on the GOT, communication between the GOT and PLC CPU is suspended and the GOT becomes inoperative.
  For bus connection: The CPU becomes faulty and the GOT becomes inoperative.
  For other than bus connection: The GOT becomes inoperative.
  A system where the GOT is used should be configured to perform any significant operation to the system by using the switches of a device other than the GOT on the assumption that a GOT communication fault will occur.
  Not doing so can cause an accident due to false output or malfunction.
- Do not use the GOT as the warning device that may cause a serious accident.
  An independent and redundant hardware or mechanical interlock is required to configure the device that displays and outputs serious warning.
  Failure to observe this instruction may result in an accident due to incorrect output or malfunction.

[DESIGN PRECAUTIONS]

DANGER

- Incorrect operation of the touch switch(s) may lead to a serious accident if the GOT backlight is gone out. When the GOT backlight goes out, the POWER LED flickers (green/orange) and the display section turns black and causes the monitor screen to appear blank, while the input of the touch switch(s) remains active.
  This may confuse an operator in thinking that the GOT is in "screensaver" mode, who then tries to release the GOT from this mode by touching the display section, which may cause a touch switch to operate.
  Note that the following occurs on the GOT when the backlight goes out.
  •The POWER LED flickers (green/orange) and the monitor screen appears blank
- The display section of the GT1595-X is an analog-resistive type touch panel.
  If you touch the display section simultaneously in 2 points or more, the switch that is located around the center of the touched point, if any, may operate.
  Do not touch the display section in 2 points or more simultaneously.
  Doing so may cause an accident due to incorrect output or malfunction.

CAUTION

- Do not bundle the control and communication cables with main-circuit, power or other wiring.
  Run the above cables separately from such wiring and keep them a minimum of 100mm (3.94in.) apart.Not doing so noise can cause a malfunction.
- Do not press the GOT display section with a pointed material as a pen or driver.
  Doing so can result in a damage or failure of the display section.

[MOUNTING PRECAUTIONS]

DANGER

- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the GOT main unit to/from the panel.
  Not doing so can cause the unit to fail or malfunction.
- Be sure to shut off all phases of the external power supply used by the system before mounting or removing the communication unit, option function board or multi-color display board onto/from the GOT.
  Not doing so can cause the unit to fail or malfunction.
- When installing the multi-color display board, wear an earth band etc. to avoid the static electricity.Not doing so can cause a unit corruption.

CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual.
  Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- When mounting the GOT to the control panel, tighten the mounting screws in the specified torque range.
  Undertightening can cause the GOT to drop, short circuit or malfunction.
  Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws or the GOT.

[MOUNTING PRECAUTIONS]

⚠ CAUTION

- When loading the communication unit to the GOT, fit it to the connection interface of the GOT and tighten the mounting screws in the specified torque range.
  Undertightening can cause the GOT to drop, short circuit or malfunction.
  Overtightening can cause a drop, failure or malfunction due to the damage of the screws or unit.
- When mounting the multi-color display board onto the GOT, tighten the mounting screws within the specified torque range.
  Loose tightening may cause the unit and/or GOT to malfunction due to poor contact.
  Overtightening may damage the screws, unit and/or GOT; they might malfunction.
- Push the option function board onto the corresponding connector until it clicks, so that it will be secured firmly.
- Push the multi-color display board onto the corresponding connector so that it will be secured firmly.
- When inserting a CF card into the GOT, push it into the insertion slot until the CF card eject button will pop out.
  Failure to do so may cause a malfunction due to poor contact.
- When inserting/removing a CF card into/from the GOT, turn the CF card access switch off in advance.
  Failure to do so may corrupt data within the CF card.
- When removing a CF card from the GOT, make sure to support the CF card by hand, as it may pop out.
  Failure to do so may cause the CF card to drop from the GOT and break.

[WIRING PRECAUTIONS]

⚠ DANGER

- Be sure to shut off all phases of the external power supply used by the system before wiring.
  Failure to do so may result in an electric shock, product damage or malfunctions.

[WIRING PRECAUTIONS]

⚠CAUTION

- Please make sure to ground FG terminal and LG terminal of the GOT power supply section by applying Class D Grounding (Class 3 Grounding Method) or higher which is used exclusively for the GOT.
  Not doing so may cause an electric shock or malfunction.
- Terminal screws which are not to be used must be tightened always at torque 0.5 to 0.8 N·m.
  Otherwise there will be a danger of short circuit against the solderless terminals.
- Use applicable solderless terminals and tighten them with the specified torque.
  If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product.
  Not doing so can cause a fire or failure.
- Tighten the terminal screws of the GOT power supply section in the specified torque range. Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or the GOT.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT. Not doing so can cause a fire, failure or malfunction.
- The module has an ingress prevention label on its top to prevent foreign matter, such as wire offcuts, from entering the module during wiring.
  Do not peel this label during wiring.
  Before starting system operation, be sure to peel this label because of heat dissipation.
- Plug the bus connection cable by inserting it into the connector of the connected unit until it "clicks". After plugging, check that it has been inserted snugly.
  Not doing so can cause a malfunction due to a contact fault.
- Plug the communication cable into the connector of the connected unit and tighten the mounting and terminal screws in the specified torque range.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

[TEST OPERATION PRECAUTIONS]

⚠DANGER

- Before performing the test operations of the user creation monitor screen (such as turning ON or OFF bit device, changing the word device current value, changing the settings or current values of the timer or counter, and changing the buffer memory current value), read through the manual carefully and make yourself familiar with the operation method.
  During test operation, never change the data of the devices which are used to perform significant operation for the system.
  False output or malfunction can cause an accident.

[STARTUP/MAINTENANCE PRECAUTIONS]

⚠DANGER

- When power is on, do not touch the terminals.
  Doing so can cause an electric shock or malfunction.
- Connect the battery correctly.
  Do not discharge, disassemble, heat, short, solder or throw the battery into the fire.
  Incorrect handling may cause the battery to generate heat, burst or take fire, resulting in injuries or fires
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases.
  Not switching the power off in all phases can cause a unit failure or malfunction.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or unit.

⚠CAUTION

- Do not disassemble or modify the unit.
  Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly.
  Doing so can cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped.
  Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull the cable portion.
  Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Do not drop the module or subject it to strong shock.
  A module damage may result.
- Do not drop or give an impact to the battery mounted to the unit.
  Doing so may damage the battery, causing the battery fluid to leak inside the battery.
  If the battery is dropped or given an impact, dispose of it without using.
- Before touching the unit, always touch grounded metal, etc. to discharge static electricity from human body, etc.
  Not doing so can cause the unit to fail or malfunction.

[BACKLIGHT REPLACEMENT PRECAUTIONS]

⚠DANGER

- Be sure to shut off all phases of the external power supply of the GOT (and the PLC CPU in the case of a bus topology) and remove the GOT from the control panel before replacing the backlight (when using the GOT with the backlight replaceable by the user).
  Not doing so can cause an electric shock.
  Replacing a backlight without removing the GOT from the control panel can cause the backlight or control panel to drop, resulting in an injury.

[BACKLIGHT REPLACEMENT PRECAUTIONS]

⚠CAUTION

- Wear gloves for the backlight replacement when using the GOT with the backlight replaceable by the user.
  Not doing so can cause an injury.
- Before replacing a backlight, allow 5 minutes or more after turning off the GOT when using the GOT with the backlight replaceable by the user.
  Not doing so can cause a burn from heat of the backlight.

[DISPOSAL PRECAUTIONS]

⚠CAUTION

- When disposing of the product, handle it as industrial waste.

[TRANSPORTATION PRECAUTIONS]

⚠CAUTION

- When transporting lithium batteries, make sure to treat them based on the transport regulations.
  (Refer to Appendix 3 for details of the regurated units.)
- Make sure to transport the GOT main unit and/or relevant unit(s) in the manner they will not be exposed to the impact exceeding the impact resistance described in the general specifications of this manual, as they are precision devices.
  Failure to do so may cause the unit to fail.
  Check if the unit operates correctly after transportation.

REVISIONS

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INTRODUCTION

Thank you for choosing the Mitsubishi Graphic Operation Terminal.
Before using the equipment, please read this manual carefully to use the equipment to its optimum.

CONTENTS

SAFETY PRECAUTIONS . . . . . A - 1
REVISIONS . . . . . A - 7
INTRODUCTION . . . . . A - 8
CONTENTS . . . . . A - 8
ABOUT MANUALS . . . . . A - 16
ABBREVIATIONS AND GENERIC TERMS . . . . . A - 17
HOW TO READ THIS MANUAL . . . . . A - 20
PACKING LIST . . . . . A - 21

1. OVERVIEW 1 - 1 to 1 - 5

1.1 Features 1 - 4
1.2 Rough Pre-operation Procedure 1 - 5

2. SYSTEM CONFIGURATION 2 - 1 to 2 - 10

2.1 Overall Configuration 2 - 1
2.2 Component List 2 - 2
2.2.1 GOT . . . . . 2 - 3
2.2.2 Option . . . . . 2 - 4

3. SPECIFICATIONS 3 - 1 to 3 - 11

3.1 General Specifications 3 - 1
3.2 Performance Specifications 3 - 2
3.2.1 GT1595-X . . . . . 3 - 2
3.2.2 GT1585-S . . . . . 3 - 4
3.2.3 GT1575-S, GT1575-V, GT1575-VN, GT1572-VN . . . . . 3 - 6
3.2.4 GT1565-V, GT1562-VN . . . . . 3 - 8
3.3 Power Supply Specifications 3 - 10
3.3.1 For GOTs powered from the 100 to 240VAC power supply . . . . . 3 - 10
3.3.2 For GOTs powered from the 24VDC power supply . . . . . 3 - 11

4. PART NAME AND SETTINGS 4 - 1 to 4 - 8

4.1 Part Names and Settings of the GT1595 4 - 1
4.2 Part Names and Settings of the GT1585 4 - 3

4.3 Part Names and Settings of the GT157 4 - 5
4.4 Part Names and Settings of the GT156 4 - 7

5. EMC AND LOW VOLTAGE DIRECTIVE 5 - 1 to 5 - 16

5.1 Requirements to Meet EMC Directive 5 - 1
5.1.1 EMC directive . . . . . 5 - 2
5.1.2 Control panel . . . . . 5 - 4
5.1.3 Noise filter (power supply line filter) . . . . . 5 - 5
5.2 Requirements for Conpliance with the Low Voltage Directive 5 - 6
5.2.1 Standard subject to GOT . . . . . 5 - 6
5.2.2 Power supply . . . . . 5 - 6
5.2.3 Control panel . . . . . 5 - 7
5.2.4 Grounding . . . . . 5 - 7
5.2.5 External wiring . . . . . 5 - 8
5.3 EMC Directive-Compliant System Configuration 5 - 9
5.3.1 GOT . . . . . 5 - 9
5.3.2 Connection method . . . . . 5 - 9
5.3.3 When the communication unit is used . . . . . 5 - 10
5.3.4 Cables . . . . . 5 - 10
5.4 Precautions for Wiring/Connecting the EMC Directive-Compliant Product 5 - 11
5.4.1 Power and ground wires wiring method . . . . . 5 - 11
5.4.2 Processing connection cables . . . . . 5 - 12
5.4.3 Grounding the cable . . . . . 5 - 16

6. INSTALLATION 6 - 1 to 6 - 4

6.1 Control Panel Inside Dimensions for Mounting GOT 6 - 1
6.2 Panel Cutting Dimensions 6 - 1
6.3 Mounting Position 6 - 2
6.4 Control Panel Inside Temperature and Mounting Angle 6 - 3
6.5 Installation Procedure 6 - 3

7. WIRING 7 - 1 to 7 - 6

7.1 Power Supply Wiring 7 - 2
7.2 Wiring of Connection Cables 7 - 3
7.3 Grouding 7 - 4
7.4 Power Supply Connection 7 - 6

8. OPTION 8 - 1 to 8 - 27

8.1 CF Card 8 - 1
8.1.1 Applicable CF card . . . . . 8 - 1
8.1.2 Installing and removing procedures of the CF card . . . . . 8 - 2
8.2 Memory Card Adaptor 8 - 5

8.2.1 Applicable memory card adaptor . . . 8 - 5
8.2.2 Installing procedure of the CF card into a memory card adaptor . . . 8 - 5
8.3 Option Function Board 8 - 6
8.3.1 Applicable option function board . . . 8 - 6
8.3.2 Installing procedure of the option function board . . . 8 - 6
8.4 Multi-Color Display Board 8 - 7
8.4.1 Applicable multi-color display board . . . 8 - 7
8.4.2 Installing procedure of the multi-color display board . . . 8 - 7
8.5 Communication Unit 8 - 8
8.5.1 Applicable communication unit . . . 8 - 8
8.5.2 Installing procedure . . . 8 - 9
8.5.3 Installing multiple communication units in layers . . . 8 - 18
8.6 RS-422 Conversion Unit 8 - 20
8.6.1 Applicable RS-422 conversion unit . . . 8 - 20
8.6.2 Installing procedure . . . 8 - 20
8.7 Battery 8 - 21
8.7.1 Applicable battery . . . 8 - 21
8.7.2 Battery specifications . . . 8 - 21
8.7.3 Battery replacement procedure . . . 8 - 21
8.7.4 Battery life . . . 8 - 22
8.8 Protective Sheet 8 - 23
8.8.1 Applicable protective sheet . . . 8 - 23
8.8.2 Installing procedure . . . 8 - 24
8.9 USB Environmental Protection Cover 8 - 25
8.9.1 Applicable USB environmental protecton cover . . . 8 - 25
8.9.2 Installing procedure . . . 8 - 25
8.10 Stand 8 - 26
8.10.1 Applicable stand . . . 8 - 26
8.10.2 Installing procedure . . . 8 - 26
8.11 Attachment 8 - 27
8.11.1 Applicable attachment . . . 8 - 27
8.11.2 Installing procedure . . . 8 - 27

9. UTILITY FUNCTION 9 - 1 to 9 - 11

9.1 Utility Execution 9 - 1
9.2 Utility Function List 9 - 2
9.3 Utility Display 9 - 5
9.3.1 Display operation of main menu . . . 9 - 6
9.3.2 Utility basic configuration . . . 9 - 9
9.3.3 Basic operation of settings change . . . 9 - 10

10. COMMUNICATION INTERFACE SETTING (COMMUNICATION SETTING) 10 - 1 to 10 - 17

10.1 Communication Setting 10 - 1
10.1.1 Communication setting functions . . . 10 - 1

10.1.2 Communication setting display operation . . . . . 10 - 1
10.1.3 Communication setting contents . . . . . 10 - 2
10.1.4 Communication setting display operation . . . . . 10 - 7
10.2 Communication Detail Settings 10 - 12
10.2.1 Communication detail settings functions . . . . . 10 - 12
10.2.2 Communication detail settings display operation . . . . . 10 - 12
10.2.3 Display contents of communication detail settings . . . . . 10 - 14

11. DISPLAY AND OPERATION SETTINGS (GOT SET UP) 11 - 1 to 11 - 29

11.1 Display Settings 11 - 2
11.1.1 Display setting functions . . . . . 11 - 2
11.1.2 Display operation of display setting . . . . . 11 - 5
11.1.3 Display setting operations . . . . . 11 - 6
11.2 Brightness, Contrast Adjustment 11 - 11
11.2.1 Brightness adjustment function . . . . . 11 - 11
11.2.2 Display operation of brightness, contrast . . . . . 11 - 11
11.2.3 Brightness adjustment operation . . . . . 11 - 12
11.3 Operation settings 11 - 13
11.3.1 Operation setting functions . . . . . 11 - 13
11.3.2 Display operation of display setting . . . . . 11 - 14
11.3.3 Setting operation of operation . . . . . 11 - 15
11.4 Security Level Change 11 - 17
11.4.1 Security level change functions . . . . . 11 - 17
11.4.2 Security change display operation . . . . . 11 - 17
11.4.3 Security level change operation . . . . . 11 - 18
11.5 Utility call key setting 11 - 19
11.5.1 Utility call key setting function . . . . . 11 - 19
11.5.2 Utility call key display operation . . . . . 11 - 19
11.5.3 Utility call key setting operation . . . . . 11 - 20
11.6 Adjusting the Touch Panel Position (Touch panel calibration Setting) 11 - 22
11.6.1 Touch panel calibration setting function . . . . . 11 - 22
11.6.2 Touch panel calibration setting display operation . . . . . 11 - 22
11.6.3 Touch panel calibration operation . . . . . 11 - 23
11.7 Q/QnA Ladder Monitor 11 - 25
11.7.1 Q/QnA ladder monitor setting function . . . . . 11 - 25
11.7.2 Display operation of display setting . . . . . 11 - 26
11.7.3 Q/QnA ladder monitor setting operation . . . . . 11 - 27
11.8 Transparent Mode (Transparent channel setting) 11 - 28
11.8.1 Transparent function setting function . . . . . 11 - 28
11.8.2 Transparent function display operation . . . . . 11 - 28
11.8.3 Setting operation of transparent function . . . . . 11 - 29

12. CLOCK SETTINGS AND BATTERY STATUS DISPLAY (TIME SETTING AND DISPLAY) 12 - 1 to 12 -5

12.1 Time Setting and Display 12 - 1
12.1.1 Time setting and display functions. . . . 12 - 1
12.1.2 Display operation of clock display and setting . . . 12 - 1
12.1.3 Clock setting operations . . . 12 - 2

13. FILE DISPLAY AND COPY(PROGRAM/DATA CONTROL) 13 - 1 to 13 - 90

13.1 Data Storage Location 13 - 1
13.1.1 Drive name allocation . . . 13 - 1
13.1.2 Data type and the storage location . . . 13 - 2
13.1.3 OS version confirmation . . . 13 - 4
13.1.4 Capacity confirmation of the project data downloading location . . . 13 - 6
13.1.5 Display file . . . 13 - 7
13.2 OS Information 13 - 10
13.2.1 Function of OS information . . . 13 - 10
13.2.2 Display operation of OS information . . . 13 - 10
13.2.3 Display example of OS information . . . 13 - 11
13.2.4 Operation of OS information . . . 13 - 12
13.3 Project Information 13 - 17
13.3.1 Function of OS information . . . 13 - 17
13.3.2 Display operation of project information . . . 13 - 17
13.3.3 Display example of project information . . . 13 - 18
13.3.4 Operation of project information . . . 13 - 19
13.4 Alarm Information 13 - 28
13.4.1 Function of alarm information . . . 13 - 28
13.4.2 The display operation of alarm information . . . 13 - 28
13.4.3 The display example of alarm information . . . 13 - 29
13.4.4 Alarm information operation. . . . 13 - 30
13.5 Hard Copy Information 13 - 36
13.5.1 The function of hardcopy information . . . 13 - 36
13.5.2 The display operation of hardcopy information . . . 13 - 36
13.5.3 Display exmaple of hardcopy information . . . 13 - 37
13.5.4 The operation of hardcopy information . . . 13 - 38
13.6 Memory card format 13 - 41
13.6.1 Format function of memory card . . . 13 - 41
13.6.2 Display operation of memory card format . . . 13 - 41
13.6.3 Format operation of memory card . . . 13 - 42
13.7 Advanced Recipe Information 13 - 44
13.7.1 Function of advanced recipe information. . . . 13 - 44
13.7.2 Operation of advanced recipe information display. . . . 13 - 45
13.7.3 Example of advanced recipe information display . . . 13 - 46
13.7.4 Advanced recipe information operation . . . 13 - 48
13.7.5 Precautions . . . 13 - 65
13.8 Logging Information 13 - 67
13.8.1 Function of logging information . . . 13 - 67
13.8.2 Display operation of logging information . . . 13 - 68
13.8.3 Example of logging information display . . . 13 - 69

13.8.4 Logging information operation . . . . . 13 - 70
13.8.5 Precautions . . . . . 13 - 79
13.9 Memory Information 13 - 81
13.9.1 Memory information functions . . . . . 13 - 81
13.9.2 Memory information display operation . . . . . 13 - 81
13.9.3 Memory information display example . . . . . 13 - 82
13.10 Special Data Information 13 - 83
13.10.1 Special data information function . . . . . 13 - 83
13.10.2 Special data information display operation . . . . . 13 - 83
13.10.3 Special data information display example . . . . . 13 - 84
13.10.4 Special data information operation . . . . . 13 - 85

14. GOT SELF CHECK (DEBUG & SELF CHECK) 14 - 1 to 14 - 19

14.1 Debug 14 - 1
14.1.1 The Debug function . . . . . 14 - 1
14.1.2 Display operation of Debug . . . . . 14 - 2
14.2 Self check 14 - 3
14.2.1 Self check function . . . . . 14 - 3
14.3 Memory Check 14 - 4
14.3.1 Memory check function . . . . . 14 - 4
14.3.2 Display operation of memory check . . . . . 14 - 4
14.3.3 Memory check operation . . . . . 14 - 5
14.4 Drawing Check 14 - 7
14.4.1 Drawing check function . . . . . 14 - 7
14.4.2 Display operation of drawing check . . . . . 14 - 7
14.4.3 Drawing check operation . . . . . 14 - 8
14.5 Font Check 14 - 12
14.5.1 Font check function . . . . . 14 - 12
14.5.2 Display operation of Font check . . . . . 14 - 12
14.5.3 Font check operation . . . . . 14 - 13
14.6 Touch Panel Check 14 - 14
14.6.1 Touch panel check function . . . . . 14 - 14
14.6.2 Display operation of Touch panel check . . . . . 14 - 14
14.6.3 Touch panel check operations . . . . . 14 - 15
14.7 I/O Check 14 - 16
14.7.1 I/O check function . . . . . 14 - 16
14.7.2 Display operation of I/O Check . . . . . 14 - 16
14.7.3 I/O Check Operation . . . . . 14 - 17

15. CLEANING OF DISPLAY SECTION (CLEAN) 15 - 1 to 15 - 2

15.1 Clean 15 - 1
15.1.1 Display operation of Clean . . . . . 15 - 1
15.1.2 Operation of Clean . . . . . 15 - 2

16. MAINTENANCE TIME NOTIFICATION SETTING (MAINTENANCE TIMING SETTING) 16 - 1 to 16 - 4

16.1 Maintenance Timing Setting 16 - 2
16.1.1 Maintenance time notification function. . . . . 16 - 2
16.1.2 Display operation of maintenance timimg setting . . . . . 16 - 3
16.1.3 Operation of maintenance time notification . . . . . 16 - 4

17. ADDITION TIMES RESET FOR MAINTENANCE TIME NOTIFICATION (ADDITION TIMES RESET) 17 - 1 to 17 - 2

17.1 Addition times reset 17 - 1
17.1.1 Addition times reset function . . . . . 17 - 1
17.1.2 Display operation of Addition times reset . . . . . 17 - 1
17.1.3 Operation of Addition times reset . . . . . 17 - 2

18. INSTALLATION OF COREOS, BOOTOS AND STANDARD MONITOR OS 18 - 1 to 18 - 13

18.1 BootOS and Standard Monitor OS Required for installation 18 - 2
18.2 Prior Preparations for Installing BootOS and Standard Monitor OS 18 - 3
18.3 BootOS and Standard Monitor OS Installation Using Memory Card 18 - 4
18.3.1 Installing when starting the GOT . . . . . 18 - 5
18.3.2 Installation method using the program/data control function (Utility) . . . . . 18 - 6
18.4 When installing the different version of BootOS, standard monitor OS 18 - 8
18.5 CoreOS 18 - 10
18.5.1 Installing the CoreOS. . . . . 18 - 10
18.5.2 When the CoreOS cannot be installed . . . . . 18 - 13

19. MAINTENANCE AND INSPECTION 19 - 1 to 19 - 16

19.1 Daily Inspection 19 - 2
19.2 Periodic Inspection 19 - 2
19.3 Cleaning Method 19 - 3
19.4 Battery Voltage Low Detection and Battery Replacement 19 - 4
19.5 Backlight Shutoff Detection and Replacement 19 - 5
19.6 Backlight Replacement 19 - 6
19.6.1 Applicable backlight . . . . . 19 - 6
19.6.2 Replacement procedure of backlight . . . . . 19 - 6

20. ERROR MESSAGE AND SYSTEM ALARM 20 - 1 to 20 - 15

20.1 Error Contents Display 20 - 1
20.2 List of Error Message/System Alarm 20 - 3
20.3 Troubleshooting in Bus Connection 20 - 12

20.3.1 Locating error positions . . . . . 20 - 12
20.3.2 Further locating error positions . . . . . 20 - 13
20.3.3 Specific example of troubleshooting . . . . . 20 - 14
20.4 Troubleshooting for Monitoring 20 - 15

APPENDICES App- 1 to App - 22

Appendix 1 External Dimensions App- 1
Appendix 2 Confirming of GOT's Hardware Version App- 9
Appendix 3 Usage Condition of Utility Function App- 10
Appendix 4 Transportation Precautions App- 15
Appendix 4.1 Relevant models . . . . . App- 15
Appendix 4.2 Transportation guidelines . . . . . App- 15
Appendix 5 List of Functions Added by GT Designer2 Version Upgrade (For GOT1000 Series) App- 16

INDEX Index- 1 to Index- 3

ABOUT MANUALS

The following manuals are also related to this product.
In necessary, order them by quoting the details in the tables below.

Related Manuals

Manual Name	Manual Number (Model Code)
GT Designer2 Version2 Basic Operation/Data Transfer Manual (For GOT1000 Series) Describes methods of the GT Designer2 installation operation, basic operation for drawing and transmitting data to GOT1000 series (Sold separately) *1	SH-080529ENG (1D7M24)
GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 1/2 GT Designer2 Version2 Screen Design Manual (For GOT1000 Series) 2/2 Describes specifications and settings of the object functions used in GOT1000 series (Sold separately) *1	SH-080530ENG SH-080531ENG (1D7M25)
GOT1000 Series Connection Manual (1/2, 2/2) Describes system configurations of the connection method applicable to GOT1000 series and cable creation method (Sold separately) *1	SH-080532ENG (1D7M26)
GOT1000 Series Extended/Option Functions Manual Describes extended functions and option functions applicable to GOT series. (Sold separately) *1	SH-080544ENG (1D7M32)
GOT1000 Series Gateway Functions Manual Describes specifications, system configurations and setting method of the gateway function. (Sold separately) *1	SH-080545ENG (1D7M33)

*1 The manual in PDF-format is included in the GT Works2 and GT Designer2 products.

ABBREVIATIONS AND GENERIC TERMS

Abbreviations and generic terms used in this manual are as follows:

■ GOT

Abbreviations and generic terms			Description
GOT1000 Series	GT1595	GT1595-X	Abbreviation of GT1595-XTBA
	GT1585	GT1585-S	Abbreviation of GT1585-STBA, GT1585-STBD
	GT157□	GT1575-S	Abbreviation of GT1575-STBA, GT1575-STBD
		GT1575-V	Abbreviation of GT1575-VTBA, GT1575-VTBD
		GT1575-VN	Abbreviation of GT1575-VNBA, GT1575-VNBD
		GT1572-VN	Abbreviation of GT1572-VNBA, GT1572-VNBD
	GT156□	GT1565-V	Abbreviation of GT1565-VTBA, GT1565-VTBD
		GT1562-VN	Abbreviation of GT1562-VNBA, GT1562-VNBD
	GT15□□, GT15		Abbreviation of GT1595, GT1585, GT157□, GT156□
	GT1155-Q		Abbreviation of GT1155-QSBD
	GT1150-Q		Abbreviation of GT1150-QLBD
	Handy GOT	GT1155HS-Q	Abbreviation of GT1155HS-QSBD
		GT1150HS-Q	Abbreviation of GT1150HS-QLBD
	GT11□□, GT11		Abbreviation of GT1155-Q, GT1150-Q, GT11 Handy GOT
GOT900 Series			Abbreviation of GOT-A900 series, GOT-F900 series
GOT800 Series			Abbreviation of GOT-800 series

■ Communication unit

Abbreviations and generic terms		Description			
Communication unit	Bus connection unit	GT15-QBUS, GT15-75QBUSL,	GT15-QBUS2, GT15-75QBUS2L,	GT15-ABUS, GT15-75ABUSL,	GT15-ABUS2, GT15-75ABUS2L
	Serial communication unit	GT15-RS2-9P,	GT15-RS4-9S,	GT15-RS4-TE	
	RS-422 conversion unit	GT15-RS2T4-9P,	GT15-RS2T4-25P		
	Ethernet communication unit	GT15-J71E71-100			
	MELSECNET/10 communication unit	GT15-75J71LP23-Z,	GT15-75J71BR13-Z		
	CC-Link communication unit	GT15-75J61BT13-Z			
	Interface converter unit	GT15-75IF900			

■ Option

Abbreviations and generic terms		Description			
Backlight		GT15-90XLTT, GT15-70VLTN,	GT15-80SLTT, GT15-60VLTT,	GT15-70SLTT, GT15-60VLTN	GT15-70VLTT,
Option function board		GT15-FNB, GT15-QFNB48M,	GT15-QFNB, GT11-50FNB	GT15-QFNB16M,	GT15-QFNB32M,
Multi-color display board		GT15-XHNB,	GT15-VHNB		
Protective Sheet		GT15-90PSCB, GT15-80PSCB, GT15-70PSCB, GT15-60PSCB, GT11-50PSCB, GT11H-50PSC	GT15-90PSGB, GT15-80PSGB, GT15-70PSGB, GT15-60PSGB, GT11-50PSGB,	GT15-90PSCW, GT15-80PSCW, GT15-70PSCW, GT15-60PSCW, GT11-50PSCW,	GT15-90PSGW, GT15-80PSGW, GT15-70PSGW, GT15-60PSGW, GT11-50PSGW,
USB environmental protection cover		GT15-UCOV,	GT11-50UCOV		
Stand		GT15-90STAND,	GT15-80STAND,	GT15-70STAND,	A9GT-50STAND
Memory card	CF card	GT05-MEM-16MC, GT05-MEM-128MC,	GT05-MEM-32MC, GT05-MEM-256MC	GT05-MEM-64MC,	
Memory card adaptor		GT05-MEM-ADPC			
Attachment		GT15-60ATT-97,	GT15-60ATT-96		
Battery		GT15-BAT,	GT11-50BAT		

■ Software

Abbreviations and generic terms	Description
GT Works2 Version☐	SW☐D5C-GTWK2-E, SW☐D5C-GTWK2-EV
GT Designer2 Version☐	SW☐D5C-GTD2-E, SW☐D5C-GTD2-EV
GT Designer2	Abbreviation of screen drawing software GT Designer2 for GOT1000/GOT900 series
GT Converter2	Abbreviation of data conversion software GT Converter2 for GOT1000/GOT900 series
GT Simulator2	Abbreviation of screen simulator GT Simulator 2 for GOT1000 / GOT900 series
GT SoftGOT2	Abbreviation of monitoring software GT SoftGOT2
GX Developer	Abbreviation of SW☐D5C-GPPW-E(-EV)/SW☐D5F-GPPW-E type software package
GX Simulator	Abbreviation of SW☐D5C-LLT-E(-EV) type ladder logic test tool function software packages (SW5D5C-LLT (-EV) or later versions)

■ License (for GT SoftGOT2)

Abbreviations and generic terms	Description
License	A9GTSOFT-LKEY-P (For DOS/V PC)
License FD	SW5D5F-SGLKEY-J (For PC CPU module)

■ Others

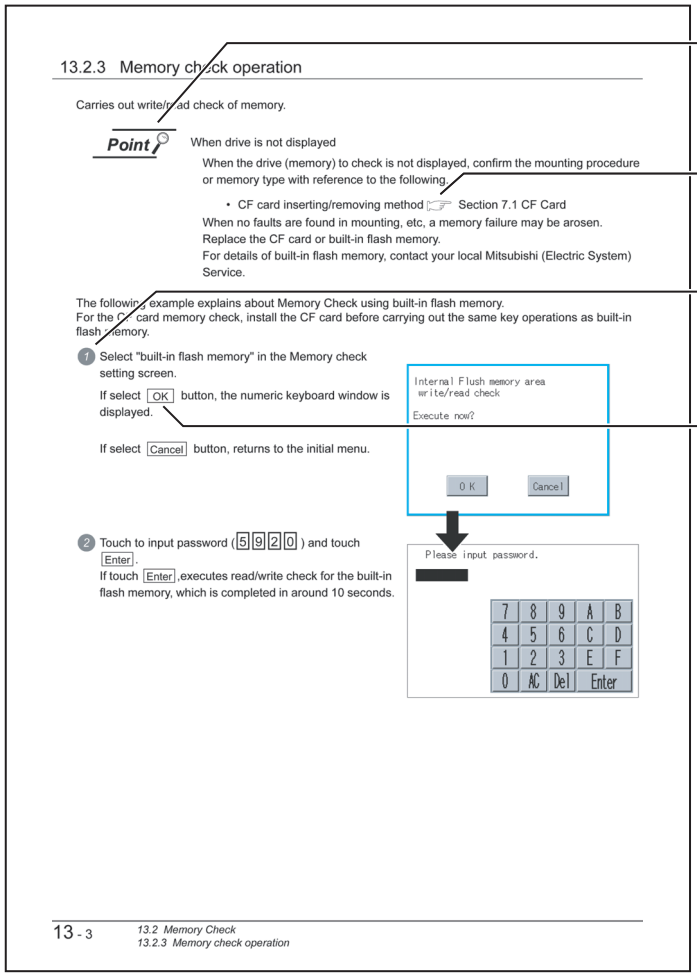
Abbreviations and generic terms	Description
Omron PLC	Abbreviation of PLC manufactured by OMRON Corporation
KEYENCE PLC	Abbreviation of PLC manufactured by KEYENCE
Sharp PLC	Abbreviation of PLC manufactured by SHARP Corporation
Toshiba PLC	Abbreviation of PLC manufactured by TOSHIBA CORPORATION
HITACHI PLC	Abbreviation of PLC manufactured by Hitachi Industrial Equipment Systems Co., Ltd.
Matsushita PLC	Abbreviation of PLC manufactured by Matsushita Electric Works, Ltd
Yaskawa PLC	Abbreviation of PLC manufactured by YASKAWA Electric Corporation
Yokogawa PLC	Abbreviation of PLC manufactured by Yokogawa Electric Corporation
Allen-Bradley PLC	Abbreviation of PLC manufactured by Allen-Bradley
SIEMENS PLC	Abbreviation of PLC manufactured by SIEMENS
OMRON temperature controller	Abbreviation of temperature controller manufactured by OMRON
YAMATAKE temperature controller	Abbreviation of temperature controller manufactured by YAMATAKE
RKC temperature controller	Abbreviation of temperature controller manufactured by RKC
GOT (server)	Abbreviation of GOTs that use the server function
GOT (client)	Abbreviation of GOTs that use the client function
Windows® font	Abbreviation of TrueType font and OpenType font available for Windows®
Intelligent function module	Indicates the modules other than the PLC CPU, power supply module and I/O module that are mounted to the base unit.

1 Functions

This manual describes functions available for the GT Designer2 Version2.18U.
For the added functions by the product version upgrade, refer to the list of functions added by GT Desiger2 version upgrade in Appendices.

2 Symbols

Following symbols are used in this manual.


13.2.3 Memory check operation
Carries out write/read check of memory.
Point
When drive is not displayed
When the drive (memory) to check is not displayed, confirm the mounting procedure or memory type with reference to the following.
• CF card inserting/removing method Section 7.1 CF Card
When no faults are found in mounting, etc, a memory failure may be arosen.
Replace the CF card or built-in flash memory.
For details of built-in flash memory, contact your local Mitsubishi (Electric System) Service.
The following example explains about Memory Check using built-in flash memory.
For the CF card memory check, install the CF card before carrying out the same key operations as built-in flash memory.
1 Select "built-in flash memory" in the Memory check setting screen.
If select OK button, the numeric keyboard window is displayed.
If select Cancel button, returns to the initial menu.
Internal Flush memory area write/read check
Execute now?
OK
Cancel
2 Touch to input password (5 9 2 0) and touch Enter .
If touch Enter ,executes read/write check for the built-in flash memory, which is completed in around 10 seconds.
Please input password.
7 8 9 A B
4 5 6 C D
1 2 3 E F
0 AC Del Enter
13 - 3
13.2 Memory Check
13.2.3 Memory check operation

Point — Refers to the information required.

Remark — Refers to the supplementary explanations for reference.

Indicates the items in which the detailed explanation is described (manual, chapter, section, item of the manual).

1 → 2 → 3 · · · ·
Indicates the operation steps.

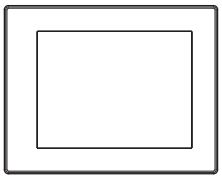
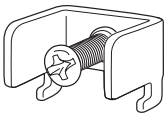
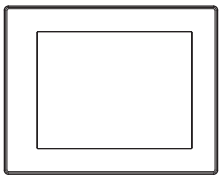
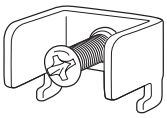
Menu and items are differentiated with parentheses.

[ ] : refers to the menu of GOT utility.

[ ] : refers to the button in the dialog box of GOT utility.

PACKING LIST

After unpacking, confirm that the following parts are included.

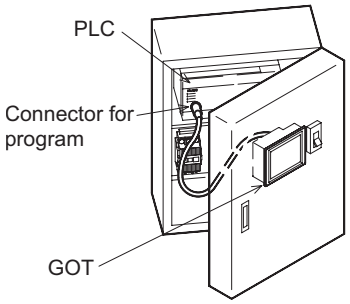
Model	Item	Quantity
GT1595-X	GOT 	1
	Installation fitting 	8
	GT15 General Description	1
GT1585-S, GT1575-S, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V, GT1562-VN	GOT 	1
	Installation fitting 	4
	GT15 General Description	1

The following products are included a spare for the plastic fixing screw of the GOT.
- GT1585-S: Hardware Version B or earlier (Apr.,2005)
- GT1575-S: Hardware Version B or earlier (Apr.,2005)
- GT1575-V: Hardware Version D or earlier (Apr.,2005)
- GT1565-V: Hardware Version D or earlier (Apr.,2005)

1. OVERVIEW

1 About GOT

GOT is installed on the panel surface of control panel or operating panel and connects to the PLC in the control panel. GOT carries out switch operation, lamp display, data display, and message display etc.



For display screen, two kinds of display screens, user screen and utility screen are available.

(1) User screen
User screen is a screen drawn by GT Designer2.
The objects of "Touch switch", "Lamp display", "Comment display", and "Numeric display" can be laid out arbitrarily to be displayed.
Moreover, the multiple screens created by GT Designer2 can be overlapped and switched to be displayed.

For details, refer to the following.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
GT Designer2 Version□ Screen Design Manual

(2) Utility Screen
Utility screen is a screen prepared beforehand for GOT.
Installing BootOS or standard OS in the GOT from GT Designer2 enables utility screen displaying.
The utility screen has menus as [Brightness/contrast adjustment screen] and [GOT memory check screen] etc.

For details, refer to the following.

☞ Chapter 9 to Chapter 17

2 About Manual

The following manuals related to GOT1000 series are available. Refer to each manual in accordance with the intended use.

(1) Installation of the software programs → Drawing → Data transfer
For operations from creating project data to transferring data to GOT, refer to the following manuals.

Purpose	GT Designer2 Version ☐ Basic Operation/Data Transfer Manual*1	GT Designer2 Version ☐ Screen Design Manual*1
Installing product on PC	Detailed	
Creating projects	Detailed	
Creating screens	Detailed	
Drawing figures	Detailed	
Making Common Settings	Overview	Detailed
Placing/Setting objects	Overview	Detailed
Transferring data to GOT	Detailed	

*1 Stored in the GT Works2/GT Designer2 in PDF format.

(2) Installing a GOT → Connecting to a PLC

For the operations from installing a GOT to communicating with a PLC CPU, refer to the following manuals.

Purpose	(Included) GT15 General Description GT11 General Description	GT15 User's Manual GT11 User's Manual	GOT1000 Series Connection Manual*1
Confirming part names and specifications of the GOT	Overview	Detailed	
Confirming the GOT installation method	Overview	Detailed	
Confirming the mounting method for communication units or option devices		Detailed	Overview
Confirming the PLC connection method			Detailed
Confirming the utility operation method		Detailed	
Confirming error codes (system alarm) displayed on the GOT		Detailed	

*1 Stored in the GT Works2/GT Designer2 in PDF format.

(3) Other manuals

The following manuals are also available.

The following manuals are stored in the GT Works2/GT Designer2 in PDF format.

(a) GOT1000 Series Extended/Option Functions Manual

Describes functions for more efficient debugging as the ladder monitor function, system monitor function and A list edit function.

(b) GOT1000 Series Gateway Functions Manual

Describes how to use the gateway function.

(c) GT Simulator2 Version □ Operating Manual

Describes how to simulate the created project data with the GT Simulator2.

(d) GT Converter2 Version □ Operating Manual

Describes how to use the GT Converter2.

1.1 Features

(1) Improved monitoring performance and connectivity to FA devices
- Using of TFT color liquid crystal display (high intensity, wide angle view and high definition type) provides clear full-color display and displays small characters clearly. (Displays digital images of BMP and other formats in 65536 colors.)*1
- Provides multi-language display function based on Unicode2.1 True Type font and high-speed drawing of beautiful text.
- High speed monitoring through high speed communication at maximum of 115.2kbps.
- High speed display and high speed touch switch response.

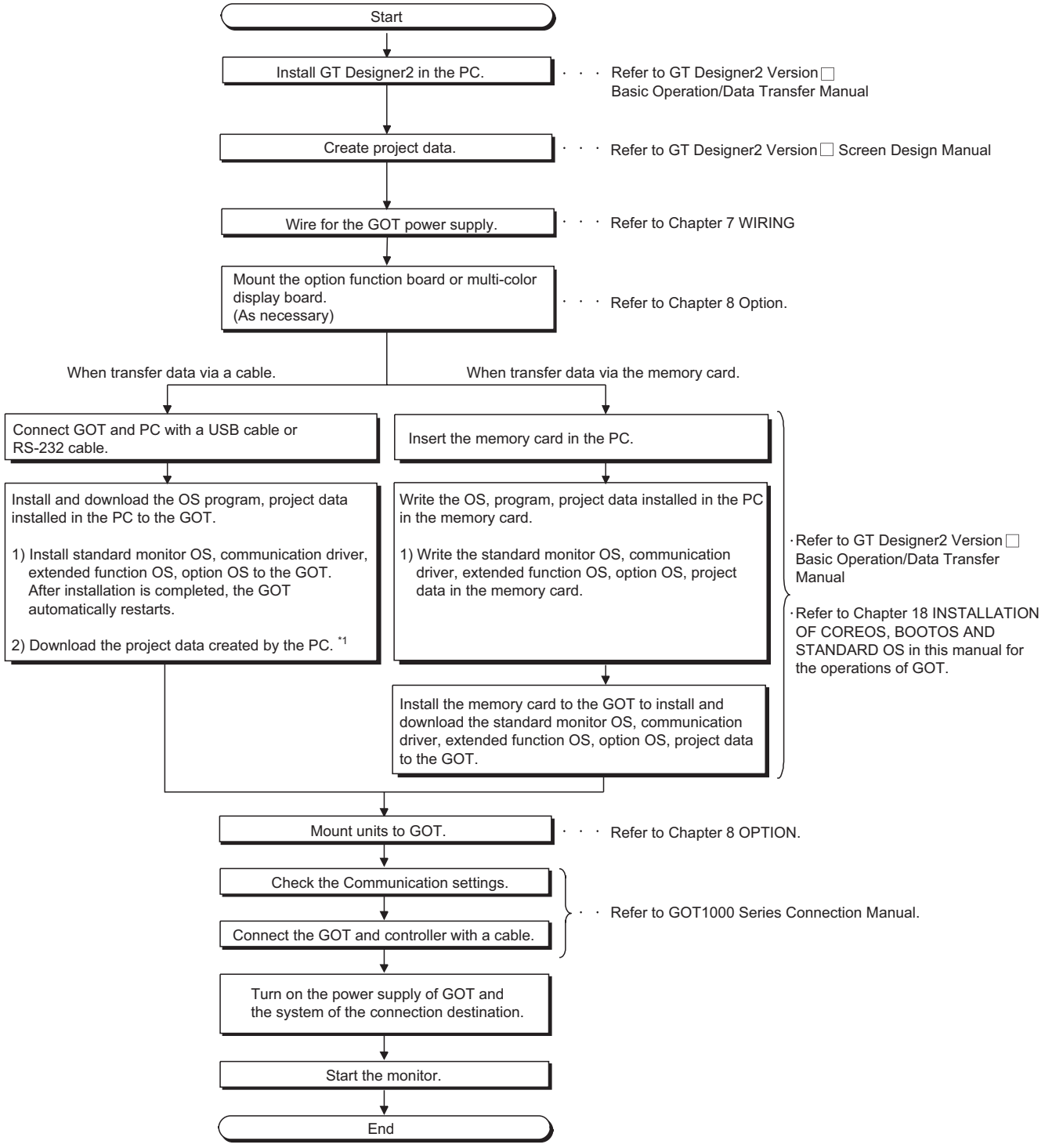
(2) More efficient GOT operations including screen design, startup, adjustment, management and maintenance works
- 9MB user memory is included as standard. (Memory capacity can be expanded up to 57MB by increasing the option memory)*1
- CF card interface is included as standard
- Font installation is available to increase the system fonts.
- Combined use of 4 types of alarms (system alarm, user alarm, alarm history, alarm popup display) realizes more efficient alarm notification.
- Maintenance timing report function is available that measures the backlight energization time and notifies of maintenance time.
- The USB connector is positioned on the GOT front. This enables the system startup to be performed more efficiently using FA device startup tool, and eliminates the necessity of indirect works (opening and closing the control panel, cable replacement, cable rewiring) in order to improve the working efficiency.
- The blown backlight bulb can be confirmed even during screen saving, with the blinked POWER LED at backlight shutoff detection.

(3) Enhanced support of FA device setup tools
- Transferring or monitoring the sequence programs using the personal computer connected to GOT, during direct connection to Q, QnA, A or FX series PLC CPU, or computer link connection to A, QnA or Q series (FA Transparent function).

*1 For GT1595-X, GT1585-S, GT1575-S, GT1575-V, GT1565-V

1.2 Rough Pre-operation Procedure

The outline procedure before operating GOT is shown.


Start
Install GT Designer2 in the PC.
Refer to GT Designer2 Version □ Basic Operation/Data Transfer Manual
Create project data.
Refer to GT Designer2 Version □ Screen Design Manual
Wire for the GOT power supply.
Refer to Chapter 7 WIRING
Mount the option function board or multi-color display board. (As necessary)
Refer to Chapter 8 Option.
When transfer data via a cable.
When transfer data via the memory card.
Connect GOT and PC with a USB cable or RS-232 cable.
Insert the memory card in the PC.
Install and download the OS program, project data installed in the PC to the GOT.
1) Install standard monitor OS, communication driver, extended function OS, option OS to the GOT. After installation is completed, the GOT automatically restarts.
2) Download the project data created by the PC. *1
Write the OS, program, project data installed in the PC in the memory card.
1) Write the standard monitor OS, communication driver, extended function OS, option OS, project data in the memory card.
Install the memory card to the GOT to install and download the standard monitor OS, communication driver, extended function OS, option OS, project data to the GOT.
·Refer to GT Designer2 Version □ Basic Operation/Data Transfer Manual
·Refer to Chapter 18 INSTALLATION OF COREOS, BOOTOS AND STANDARD OS in this manual for the operations of GOT.
Mount units to GOT.
Refer to Chapter 8 OPTION.
Check the Communication settings.
Connect the GOT and controller with a cable.
Refer to GOT1000 Series Connection Manual.
Turn on the power supply of GOT and the system of the connection destination.
Start the monitor.
End

* 1 Project data can be also downloaded/uploaded via Ethernet.
For download/upload of project data via Ethernet, BootOS and standard monitor OS should be installed in the GOT in advance so that the GOT and PC can communicate with each other via Ethernet by setting Communication Settings.
Refer to the following manual for details.

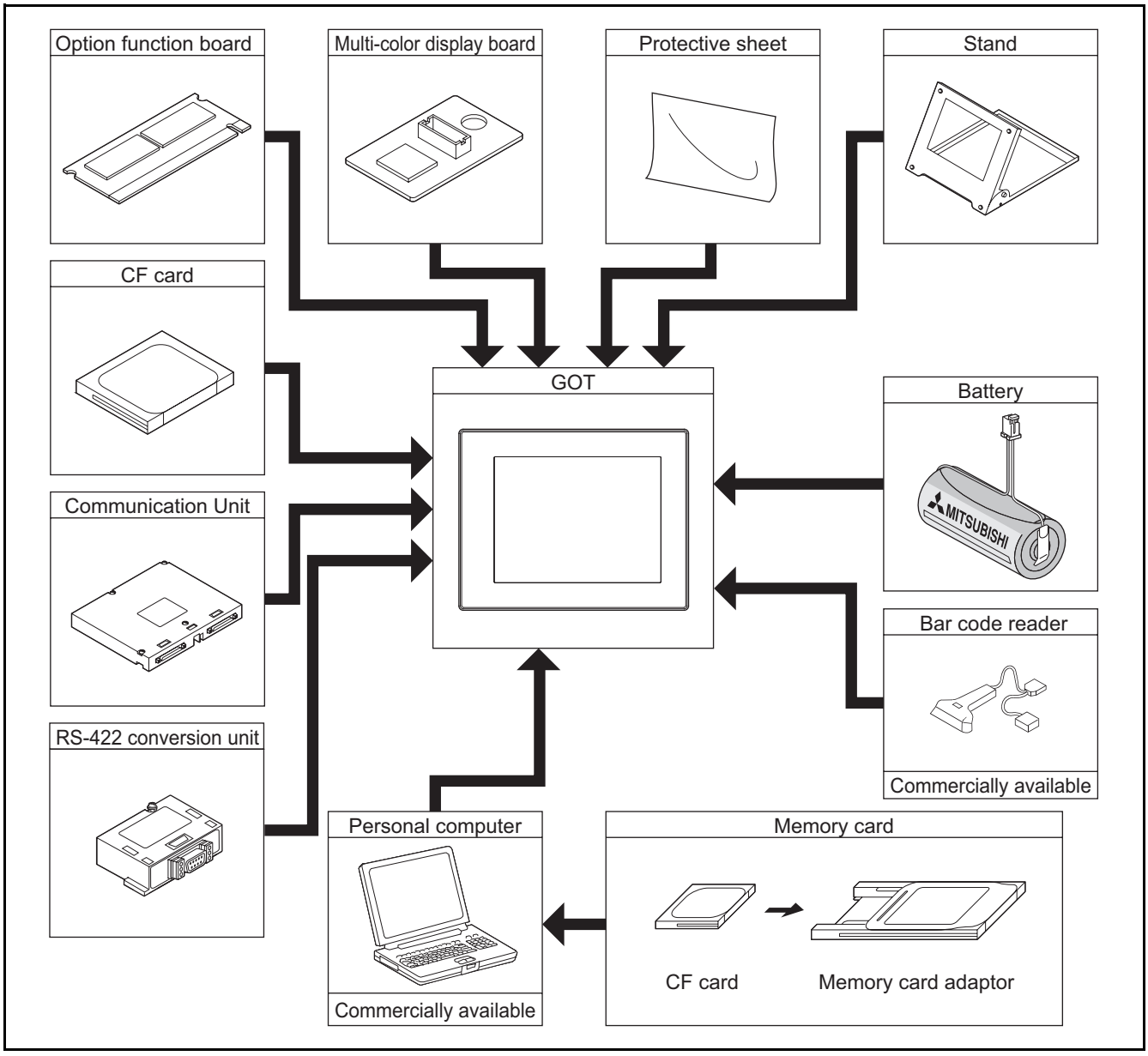
☞ GT Designer2 Version □ Basic Operation/Data Transfer Manual (Chapter 8 TRANSFERRING DATA)

2. SYSTEM CONFIGURATION

2.1 Overall Configuration

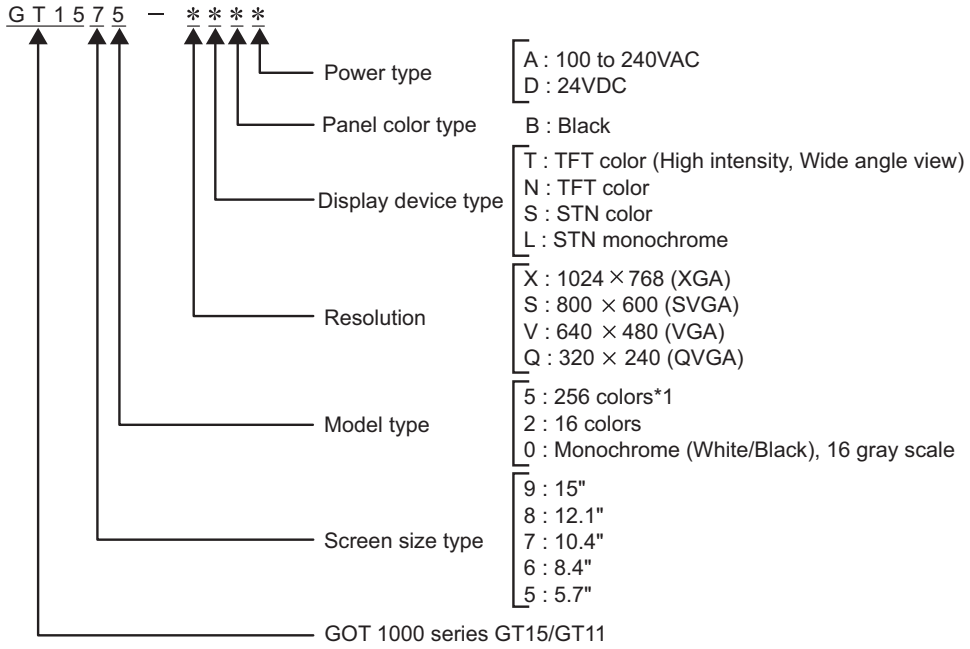
The overall configuration of GOT is as follows.
For the connection methods applicable to GOT1000 series and cable, refer to the following.

☞GOT1000 Series Connection Manual



2.2 Component List

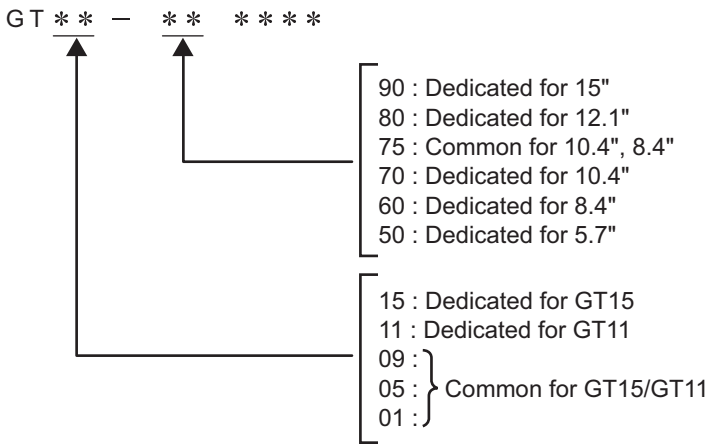
(1) Explanation of the GOT model name



*1 For models supporting 65536 colors, refer to the following.

☞ 2.2.1 GOT

(2) Explanation of the option model name


GT** – ** ****
90 : Dedicated for 15"
80 : Dedicated for 12.1"
75 : Common for 10.4", 8.4"
70 : Dedicated for 10.4"
60 : Dedicated for 8.4"
50 : Dedicated for 5.7"
15 : Dedicated for GT15
11 : Dedicated for GT11
09 :
05 :
01 :
Common for GT15/GT11

2.2.1 GOT

Product name	Model name	Specifications
GOT	GT1595-XTBA	15" (1024 × 768 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 100 to 240VAC, Memory size 9MB
	GT1585-STBA	12.1" (800 × 600 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 100 to 240VAC, Memory size 9MB
	GT1585-STBD	12.1" (800 × 600 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 24VDC, Memory size 9MB
	GT1575-STBA	10.4" (800 × 600 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 100 to 240VAC, Memory size 9MB
	GT1575-STBD	10.4" (800 × 600 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 24VDC, Memory size 9MB
	GT1575-VTBA	10.4" (640 × 480 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 100 to 240VAC, Memory size 9MB
	GT1575-VTBD	10.4" (640 × 480 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 24VDC, Memory size 9MB
	GT1575-VNBA	10.4" (640 × 480 dots), TFT color liquid crystal, 256 colors, 100 to 240VAC, Memory size 5MB
	GT1575-VNBD	10.4" (640 × 480 dots), TFT color liquid crystal, 256 colors, 24VDC, Memory size 5MB
	GT1572-VNBA	10.4" (640 × 480 dots), TFT color liquid crystal, 16 colors, 100 to 240VAC, Memory size 5MB
	GT1572-VNBD	10.4" (640 × 480 dots), TFT color liquid crystal, 16 colors, 24VDC, Memory size 5MB
	GT1565-VTBA	8.4" (640 × 480 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 100 to 240VAC, Memory size 9MB
	GT1565-VTBD	8.4" (640 × 480 dots), TFT color liquid crystal, (high intensity, wide angle view), 256 colors/65636 colors*, 24VDC, Memory size 9MB
	GT1562-VNBA	8.4" (640 × 480 dots), TFT color liquid crystal, 16 colors, 100 to 240VAC, Memory size 5MB
	GT1562-VNBD	8.4" (640 × 480 dots), TFT color liquid crystal, 16 colors, 24VDC, Memory size 5MB

*: When the multi color display board is installed, 65536 colors are available.

2.2.2 Option

PLC connection cable (Sold separately)

Product name		Model name	Description	
RS-422 Cable	FXCPU direct connection cable, FX communication function extension board connection cable	GT01-C10R4-8P	Cable length 1m	For connecting FXCPU (MINI DIN 8 pins connector) and GOT For connecting FXCPU communication function extension board (MINI DIN 8 pins connector) and GOT
		GT01-C30R4-8P	Cable length 3m	
		GT01-C100R4-8P	Cable length 10m	
		GT01-C200R4-8P	Cable length 20m	
		GT01-C300R4-8P	Cable length 30m	
	QnA/A/FXCPU direct connection cable, computer link connection cable	GT01-C30R4-25P	Cable length 3m	For connecting QnA/ACPU/Motion controller (A series)/FX (FX_1,FX_2,FX_{2C}) and GOT For connecting FA-CNV □ CBL and GOT For connecting serial communication unit (AJ71QC24(N)-R4) and GOT
		GT01-C100R4-25P	Cable length 10m	
		GT01-C200R4-25P	Cable length 20m	
		GT01-C300R4-25P	Cable length 30m	
RS-232 Cable	QCPU direct connection cable	GT01-C30R2-6P	Cable length 3m	For connecting QCPU and GOT
	FX communication function extension board connection cable, FX communication function adapter connection cable, data transfer cable	GT01-C30R2-9S	Cable length 3m	For connecting FXCPU communication function extension board (D-sub 9 pins connector), FXCPU communication function adapter (D-sub 9 pins connector) and GOT For connecting personal computer (Drawing software) (D-sub 9 pins: female) and GOT (D-sub 9 pins: female)
	FX communication function adaptor connection cable, data transfer cable	GT01-C30R2-25P	Cable length 3m	For connecting FXCPU communcation function adaptor (D-sub 25 pins connector) and GOT For connecting personal computer (Drawing software) (D-sub 25 pins: male) and GOT (D-sub 9 pins: female)
USB Cable	Data transfer cable	GT09-C20USB-5P	Cable length 2m	For connecting personal computer (Drawing software) (USB) and GOT (USB Mini)

Communication unit (Sold separately)

Product name	Model name	Description	
Bus connection unit	GT15-QBU	For QCPU (Q Mode)/Motion controller (Q Series) connection (standard model)	For terminal GOT, 1 Channel
	GT15-QBUS2		For intermediary and terminal GOTs, 2 channels
	GT15-ABUS	For A/QnACPU/Motion controller (A Series) connection (standard model)	For terminal GOT, 1 Channel
	GT15-ABUS2		For intermediary and terminal GOTs, 2 channels
	GT15-75QBUSL	For QCPU (Q Mode)/Motion controller (Q Series) connection (slim model)	For terminal GOT, 1 Channel
	GT15-75QBUS2L		For intermediary and terminal GOTs, 2 channels
	GT15-75ABUSL	For A/QnACPU/Motion controller (A Series) connection (slim model)	For terminal GOT, 1 Channel
	GT15-75ABUS2L		For intermediary and terminal GOTs, 2 channels
Serial communication unit	GT15-RS2	For RS-232 interface connection, connector type	
	GT15-RS4	For RS-422 interface connection, connector type	
	GT15-RS4-TE	For RS-422 interface connection, terminal block type	
Ethernet communication unit	GT15-J71E71-100	Ethernet (100Base-TX/10Base-T) unit	
MELSECNET/10 communication unit	GT15-75J71LP23-Z	Optical loop unit (A9GT-QJ71LP23 + GT15-75IF900 set)	
	GT15-75J71BR13-Z	Coaxial bus unit (A9GT-QJ71BR13 + GT15-75IF900 set)	
CC-Link communication unit	GT15-75J61BT13-Z	Intelligent device station unit (A8GT-J61BT13 + GT15-75IF900 set)	
Interface converter unit	GT15-75IF900	Conversion unit for GOT-A900/GOT800 series communication unit	

RS-422 conversion unit (Sold separately)

Product name	Model name	Description	
RS-422 conversion unit	GT15-RS2T4-9P	RS-232 → RS-422 conversion unit	RS-422 side connector 9 pins
	GT15-RS2T4-25P		RS-422 side connector 25 pins

Bus extension connector box (Sold separately)

Product name	Model name	Description
Bus extension connector box	A9GT-QCNB	For QCPU (Q Mode)/Motion controller (Q series) long distance (13.2m or longer) bus connection

Bus connector conversion box (Sold separately)

Product name	Model name	Description
Bus connector conversion box	A7GT-CNB	For QnA/ACPU/Motion controller (A series) long distance bus connection (For conversion from large type connector to small type connector)

QCPU (Q Mode) bus connection cable (Sold separately)

Product name	Model name	Description	
Q extension cable GOT-to-GOT connection cable	GT15-QC06B	Cable length 0.6m	For connecting QCPU and GOT For connecting GOT and GOT
	GT15-QC12B	Cable length 1.2m	
	GT15-QC30B	Cable length 3m	
	GT15-QC50B	Cable length 5m	
	GT15-QC100B	Cable length 10m	
Q long distance connection cable GOT-to-GOT long distance connection cable	GT15-QC150BS	Cable length 15m	For long distance connection (13.2m or longer) of QCPU and GOT (A9GT-QCNB is necessary) For long distance connection of GOT and GOT
	GT15-QC200BS	Cable length 20m	
	GT15-QC250BS	Cable length 25m	
	GT15-QC300BS	Cable length 30m	
	GT15-QC350BS	Cable length 35m	

QnA/ACPU/Motion controller (A series) bus connection cable (Sold separately)

Product name	Model name	Description	
Small-size CPU extension cable GOT-to-GOT connection cable	GT15-A1SC07B	Cable length 0.7m	For connecting QnAS/AnSCPU/Motion controller (A series) and GOT For connecting GOT and GOT
	GT15-A1SC12B	Cable length 1.2m	
	GT15-A1SC30B	Cable length 3m	
	GT15-A1SC50B	Cable length 5m	
	GT15-A1SC05NB	Cable length 0.45m	For connecting QnAS/AnsCPU and A7GT-CNB
	GT15-A1SC07NB	Cable length 0.7m	
	GT15-A1SC30NB	Cable length 3m	
	GT15-A1SC50NB	Cable length 5m	
Large-size CPU extension cable	GT15-C12NB	Cable length 1.2m	For connecting QnA/ACPU/Motion controller (A series /Extension base) and GOT
	GT15-C30NB	Cable length 3m	
	GT15-C50NB	Cable length 5m	
	GT15-AC06B	Cable length 0.6m	For connecting QnA/ACPU/Motion controller (A series /Extension base) and A7GT-CNB
	GT15-AC12B	Cable length 1.2m	
	GT15-AC30B	Cable length 3m	
	GT15-AC50B	Cable length 5m	
	GT15-A370C12B-S1	Cable length 1.2m	For connecting Motion controller (A series / Extension base) and GOT
	GT15-A370C25B-S1	Cable length 2.5m	
	GT15-A370C12B	Cable length 1.2m	For connecting Motion controller (A series / Extension base) and A7GT-CNB
	GT15-A370C25B	Cable length 2.5m	
Small-size CPU long distance connection cable	GT15-C100EXSS-1	Cable length 10.6m	For connecting QnAS/AnSCPU/Motion controller (A series) and GOT (For long distance, 13.2m or longer) For connecting A7GT-CNB and GOT (For long distance, 13.2m or longer)
	GT15-C200EXSS-1	Cable length 20.6m	
	GT15-C300EXSS-1	Cable length 30.6m	
GOT-to-GOT long distance connection cable	GT15-C07BS	Cable length 0.7m	For connecting GOT and GOT
	GT15-C12BS	Cable length 1.2m	
	GT15-C30BS	Cable length 3m	
	GT15-C50BS	Cable length 5m	
	GT15-C100BS	Cable length 10m	
	GT15-C200BS	Cable length 20m	
	GT15-C300BS	Cable length 30m	
A0J2HCPU connection cable	GT15-J2C10B	Cable length 1m	For connecting A0J2HCPU power supply module (A0J2-PW) and GOT
Buffer circuit cable	GT15-EXCNB	Cable length 0.5m	Combine with GT15-C □ BS when use

CF card (Sold separately)

Product name	Model name	Description
CF card	GT05-MEM-16MC	Flash ROM 16MB
	GT05-MEM-32MC	Flash ROM 32MB
	GT05-MEM-64MC	Flash ROM 64MB
	GT05-MEM-128MC	Flash ROM 128MB
	GT05-MEM-256MC	Flash ROM 256MB
	—	Commercially-available CF card *1

*1: Some models with the operations checked by our company are usable.
For the operation-checked models, refer to "List of valid devices applicable for GOT1000 series" (T10-0039) separately available.
The Technical News above is available as a reference at the information site for Mitsubishi industrial automation products MELFANSweb home page.
(MELFANSweb home page: http:// wwwf2.mitsubishielectric.co.jp/melfansweb/english/index_e.htm)

Bar code reader (Sold separately)

Product name	Model name	Description
Bar code reader	—	Commercially-available bar code reader *2

*2: Some models with the operations checked by our company are usable.
For the operation-checked models, refer to "List of valid devices applicable for GOT1000 series" (T10-0039) separately available.
The Technical News above is available as a reference at the information site for Mitsubishi industrial automation products MELFANSweb home page.
(MELFANSweb home page: http:// wwwf2.mitsubishielectric.co.jp/melfansweb/english/index_e.htm)

Memory card adaptor (Sold separately)

Product name	Model name	Description
Memory card adaptor	GT05-MEM-ADPC	CF card to memory card (Type II) conversion adaptor

Option function board (Sold separately)

Product name	Model name	Description
Option function board	GT15-FNB	Option function board Applicable for MELSEC-A/FX ladder monitor function
	GT15-QFNB	Option function board Applicable for MELSEC-Q/QnA/A/FX ladder monitor function
	GT15-QFNB16M	Option function board with add-on memory (Option function+16MB) Applicable for MELSEC-Q/QnA/A/FX ladder monitor function
	GT15-QFNB32M	Option function board with add-on memory (Option function+32MB) Applicable for MELSEC-Q/QnA/A/FX ladder monitor function
	GT15-QFNB48M	Option function board with add-on memory (Option function+48MB) Applicable for MELSEC-Q/QnA/A/FX ladder monitor function

Multi color display board (Sold separately)

Product name	Model name	Description
Multi-color display board	GT15-XHNB	Multi-color display board for XGA (For 65536-color display) Multi-color display board for SVGA/VGA (For 65536-color display) *3
	GT15-VHNB	Multi-color display board for SVGA/VGA (For 65536-color display)

*3: To use it for a SVGA or VGA GOT, install the following OS to the GOT.

(Cannot be used for a SVGA or VGA GOT without installing the OS.)

BootOS Ver. 02.01.00.E or later

Standard monitor OS: Ver. 02.01.00 or later

For how to install the OS, refer to GT Designer2 Version□ Basic Operation/Data Transfer Manual.

Stand (Sold separately)

Product name	Model name	Description
Stand	GT15-90STAND	Stand for 15"
	GT15-80STAND	Stand for 12.1"
	GT15-70STAND	Stand for 8.4"/10.4"

Battery (Sold separately)

Product name	Model name	Description
Battery	GT15-BAT	Battery for clock data and maintenance report data backups

Protective sheet (Sold separately)

Product name	Model name	Description	
Protective sheet	GT15-90PSCB	15" protective sheet	Clear 5 sheets
	GT15-90PSGB		Antiglare 5 sheets
	GT15-90PSCW		Clear (Frame: white) 5 sheets
	GT15-90PSGW		Antiglare (Frame: white) 5 sheets
	GT15-80PSCB	12.1" protective sheet	Clear 5 sheets
	GT15-80PSGB		Antiglare 5 sheets
	GT15-80PSCW		Clear (Frame: white) 5 sheets
	GT15-80PSGW		Antiglare (Frame: white) 5 sheets
	GT15-70PSCB	10.4" protective sheet	Clear 5 sheets
	GT15-70PSGB		Antiglare 5 sheets
	GT15-70PSCW		Clear (Frame: white) 5 sheets
	GT15-70PSGW		Antiglare (Frame: White) 5 sheets
	GT15-60PSCB	8.4" protective sheet	Clear 5 sheets
	GT15-60PSGB		Antiglare 5 sheets
	GT15-60PSCW		Clear (Frame: white) 5 sheets
	GT15-60PSGW		Antiglare (Frame: white) 5 sheets

Backlight (Sold separately)

Product name	Model name	Description
Backlight*4	GT15-90XLTT	For 15" TFT (XGA) LCD of high intensity and wide angle view
	GT15-80SLTT	For 12.1" TFT (SVGA) LCD of high intensity and wide angle view
	GT15-70SLTT	For 10.4" TFT (SVGA) LCD of high intensity and wide angle view
	GT15-70VLTT	For 10.4" TFT (VGA) LCD of high intensity and wide angle view
	GT15-70VLTN	For 10.4" TFT (VGA) LCD
	GT15-60VLTT	For 8.4" TFT (VGA) LCD of high intensity and wide angle view
	GT15-60VLTN	For 8.4" TFT (VGA) LCD

*4: At GOT purchase, it is installed in the main unit.

USB environmental protection cover (Sold separately)

Product name	Model name	Description
USB environmental protection cover *5	GT15-UCOV	Environmental cover for USB interface on the GOT main unit front side (For complying IP67)

*5: At GOT purchase, it is installed in the main body.

Attachment (Sold separately)

Product name	Model name	Description	
Attachment	GT15-60ATT-96	For 8.4" attachment	A960GOT → GT1565
	GT15-60ATT-97		A97 □ GOT → GT1565

Drawing software (Sold separately)

Product name	Model name	Description
GT Designer2	SW □ D5C-GTD2-J (□ indicates the version)*6	Drawing software for GOT1000/GOT900 series

* 6: The □ is assigned with an integer 2 or more.

PC connection cable (Sold separately)

Product name	Model name	Description	
Project data transfer cable	GT01-C30R2-9S	Cable length 3m	For connecting GOT (D sub 9-pin female) and PC (D sub 9-pin female)
	GT01-C30R2-25P	Cable length 3m	For connecting GOT (D sub 9-pin female) and PC (D sub 25-pin male)
	GT09-C20USB-5P	Cable length 2m	For connecting GOT (USB mini) and PC (USB)

3. SPECIFICATIONS

3.1 General Specifications

Item		Specifications					
Operating ambient temperature	Display section	0 to 50°C					
	Other than display section	0 to 55°C					
Storage ambient temperature		-20 to 60°C					
Operating ambient humidity		10 to 90% RH, non-condensing					
Storage ambient humidity		10 to 90% RH, non-condensing					
Vibration resistance*1		Conforms to JIS B3502 and IEC61131-2		Frequency	Acceleration	Half-amplitude	Sweep Count
			Under intermittent vibration	5 to 9Hz	-	3.5mm	10 times each in X, Y and Z directions
				9 to 150Hz	9.8m/s^2	-	
			Under continuous vibration	5 to 9Hz	-	1.75mm	
				9 to 150Hz	4.9m/s^2	-	
Shock resistance		Conforms to JIS B3502, IEC 61131-2 (147 m/s^2, 3 times each in X, Y and Zdirections)					
Operating atmosphere		No corrosive gas					
Operating altitude*2		2000 m (6562 ft) max.					
Installation location		Inside control panel					
Overvoltage category*3		II or less					
Pollution degree*4		2 or less					
Cooling method		Self-cooling					

*1 When using the MELSECNET/10 communication unit (GT15-75J71LP23-Z, GT15-75J71BR13-Z) or CC-Link communication unit (GT15-75J61BT13-Z), refer to the manual of the communication unit you use. (Differs with the specification of GOT.)

*2 Do not use or store the GOT under pressure higher than the atmospheric pressure of altitude 0m (0ft.). Failure to observe this instruction may cause a malfunction.

*3 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within the premises.
Category II applies to equipment for which electrical power is supplied from fixed facilities.
The surge voltage withstand level for up to the raged voltage of 300 V is 2500 V.

*4 This index indicates the degree to which conductive material is generated in the environment where the equipment is used.
In pollution degree 2, only non-conductive pollution occurs but temporary conductivity may be produced due to condensation.

3.2 Performance Specifications

The performance specifications of the GT15 is as follows.

☞ • 3.2.1 GT1595-X
• 3.2.2 GT1585-S
• 3.2.3 GT1575-S, GT1575-V, GT1575-VN, GT1572-VN
• 3.2.4 GT1565-V, GT1562-VN

3.2.1 GT1595-X

Item			Specifications
			GT1595-XTBA
Display section[*1]	Type		TFT color liquid crystal display (High intensity and wide angle view)
	Screen size		15"
	Resolution		1,024 × 768 dots
	Display size		304.1(12.0)(W) × 228.1(8.98)(H) [mm](inch)
	Display character		16-dot standard font: 64 characters × 48 lines
			12-dot standard font : 85 characters × 64 lines
	Display color		256color/65536color[*2]
	Display angle		Left/Right : 75 degrees Top : 50 degrees Bottom : 60 degrees
	Intensity of LCD only		450 [cd/m²]
	Intensity adjustment		8-level adjustment
	Life		Approx. 52,000 h (Operating ambient temperature : 25°C)
Backlight			Cold cathode fluorescent tube (replaceable) backlight shutoff detection function is included Backlight off/screen saving time can be set.
	Life[*3]		Approx. 50,000 h or longer (Time when display luminance reaches 50% at the operating ambient temperature of 25°C)
Touch panel	Number of Touch key		3,072 objects/screen (48 lines × 64 columns)
	Key size		Minimum 16 x 16 dots (per key)
	Number of objects that can be simultaneously touched		Simultaneous presses not allowed (Only 1 point can be touched)
	Life		1 million times or more (operating force 0.98N max.)
Human sensor	Detection length		1(39.37) [m](inch)
	Detection range		Left/Right/Top/Bottom: 70 degrees
	Detection delay time		0 to 4s
Memory[*4]	C drive		Built-in flash memory 9Mbytes (for storing project data and OS)
		Life (Number of write times)	100,000 times
Battery			GT15-BAT lithium battery (Option)
	Backup target		Clock data and maintenance time notification data
	Life		Approx. 5 years (Operating ambiant temperature of 25°C)
Buzzer output			Single tone (tone length adjustable)

(Continued to next page)

Item		Specifications
		GT1595-XTBA
Built-in interface	RS-232	RS-232, 1ch Transmission speed : 115,200/57,600/38,400/19,200/9,600/4,800 bps Connector shape : D-sub 9-pin (Male) Application : For communicating with a controller or connecting a personal computer (Project data upload/doxnload, OS installation, transparent function)
	USB	USB (Full Speed 12Mbps), 1ch Connector shape : Mini-B Application : PC communication (screen data upload/download, OS installation and FA transparent function)
	CF card	Compact flash slot, 1ch Connector shape : TYPE I Application : Data transfer, data storage
	Option function board	For option function board mounting, 1ch
	Multi-color display board	For multi-color display board mounting, 1ch
	Communication unit/ Option unit	For communication unit/option unit mounting, 2ch
Buzzer output		Single tone (tone length adjustable)
Protective structure		Inside the enclosure: IP67*5 Outside the enclosure: IP2X
External dimension (Excluding USB environmental protection cover)		397(15.6)(W) x 296(11.7)(H) × 61(2.40)(D)[mm](inch)
Panel cutting dimensions		383.5(15.1)(W) × 282.5(11.1)(H)[mm](inch)
Weight		4.9kg (mounting fixtures are not included)
Compatible software package (GT Designer2 Version)		2.17T or later

*1 Bright dots (always lit) and dark dots (unlit) may appear on a liquid crystal display panel. It is impossible to completely avoid this symptom, as the liquid crystal display comprises of a great number of display elements. Please note that these dots appear due to its characteristic and are not caused by product defect.

*2 Full-color display (66536 colors) is available when the multi-color display board is mounted. (☞ 8.4 Multi-Color Display Board)

*3 The GOT screen saving/backlight off function prevents images from becoming permanently etched on the display screen and increases the backlight life.

*4 ROM in which new data can be written without deleting the written data.

*5 Compliant with IP67 when the USB environmental protection cover is attached. Compliant with IP2X at the USB interface only when a USB cable is connected. Note that this does not guarantee all users' operation environment.

3.2.2 GT1585-S

Item			Specifications	
			GT1585-STBA	GT1585-STBD
Display section*1	Type		TFT color liquid crystal display (High intensity and wide angle view)	
	Screen size		12.1"	
	Resolution		800 × 600 dots	
	Display size		246(9.69)(W) × 184.5(7.26)(H) [mm](inch)	
	Display character		16-dot standard font: 50 characters × 37 lines 12-dot standard font: 66 characters × 50 lines	
	Display color		256color/65536color*2	
	Display angle		Left/Right: 60 degrees Top : 40 degrees Bottom : 50 degrees	
	Intensity of LCD only		350 [cd/m^2]	
	Intensity adjustment		8-level adjustment	
	Life		Approx. 50,000 h (Operating ambient temperature : 25°C)	
Backlight			Cold cathode fluorescent tube (replaceable) backlight shutoff detection function is included. Backlight off/screen saving time can be set.	
	Life*3		Approx. 50,000 h or longer (Time when display luminance reaches 50% at the operating ambient temperature of 25°C)	
Touch panel	Number of touch keys		1,900 objects/screen (Matrix structure of 38 lines × 50 columns)	
	Key size		Minimum 16 × 16 dots (per key)	
	Number of objects that can be simultaneously touched		Maximum of 2 objects	
	Life		1 million times or more (operating force 0.98N max.)	
Human Sensor	Detection length		1(39.37) [m](inch)	
	Detection range		Left/Right/Top/Bottom: 70 degrees	
	Detection delay time		0 to 4s	
Memory*4	C drive		Built-in flash memory 9Mbytes (for storing project data and OS)	
		Life (Number of write times)	100,000 times	
Battery			GT15-BAT lithium battery (Option)	
	Backup target		Clock data and maintenance time notification data	
	Life		Approx. 5 years (Operating ambient temperature of 25°C)	

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Item		Specifications	
		GT1585-STBA	GT1585-STBD
Built-in interface	RS-232	RS-232, 1ch Transmission speed : 115,200/57,600/38,400/19,200/9,600/4,800 bps Connector shape : D-sub 9-pin (Male) Application : For communicating with a controller or connecting a personal computer (Project data upload/download, OS installation, transparent function)	
	USB	USB (Full Speed 12Mbps), 1ch Connector shape : Mini-B Application : PC communication (screen data upload/download, OS installation and FA transparent function)	
	CF card	Compact flash slot, 1ch Connector shape : TYPE I Application : Data transfer, data storage	
	Option function board	For option function board mounting, 1ch	
	Multi-color display board	For multi-color display board mounting, 1ch	
	Communication unit/ Option unit	For communication unit/option unit mounting, 2ch	
Buzzer output		Single tone (tone length adjustable)	
Protective structure		Inside the enclosure: IP67 *5 Outside the enclosure: IP2X	
External dimensions (Excluding USB environmental protection cover)		316(12.44)(W) × 242(9.53)(H) × 52(2.05)(D) [mm](inch)	
Panel cutting dimensions		302(11.89)(W) × 228(8.98)(H)[mm](inch)	
Weight		2.8 kg (mounting fixtures are not included)	
Compatible software package (GT Designer2 Version)		2.04E or later	2.17T or later

*1 Bright dots (always lit) and dark dots (unlit) may appear on a liquid crystal display panel. It is impossible to completely avoid this symptom, as the liquid crystal display comprises of a great number of display elements. Please note that these dots appear due to its characteristic and are not caused by product defect.

*2 Full-color display (66536 colors) is available when the multi-color display board is mounted. (☞ 8.4 Multi-Color Display Board)

*3 The GOT screen saving/backlight off function prevents images from becoming permanently etched on the display screen and increases the backlight life.

*4 ROM in which new data can be written without deleting the written data.

*5 Compliant with IP67 when the USB environmental protection cover is attached. Compliant with IP2X at the USB interface only when a USB cable is connected. Note that this does not guarantee all users' operation environment.

3.2.3 GT1575-S, GT1575-V, GT1575-VN, GT1572-VN

Item		Specifications			
		GT1575-STBA, GT1575-STBD	GT1575-VTBA, GT1575-VTBD	GT1575-VNBA, GT1575-VNBD	GT1572-VNBA, GT1572-VNBD
Display section*1	Type	TFT color liquid crystal (LCD of high intensity and wide angle view)		TFT color liquid crystal	
	Screen size	10.4"			
	Resolution	800×600dots	640×480dots		
	Display size	211(8.31)(W)×158(6.22)(H)[mm](inch)			
	Display character	16-dot standard font: 50 characters × 37 lines 12-dot standard font: 66 characters × 50 lines	16-dot standard font:40 characters × 30 lines 12-dot standard font:53 characters × 40 lines		
	Display color	256color/65536color*2		256color	16color
	Display angle	Left/Right:50 degrees Top :35 degrees Bottom :45 degrees	Left/ Right/Top/ Bottom: 85 degrees	Left/Right :45 degrees Top :30 degrees Bottom :20 degrees	
	Intensity of LCD only	280[cd/m^2]	380[cd/m^2]	200[cd/m^2]	
	Intensity adjustment	8-level adjustment		4-level adjustment	
	Life	Approx. 50,000 h (Operating ambient temparature:25°C)	Approx. 41,000 h (Operating ambient temparature:25°C)		
Backlight		Cold cathode fluorescent tube (replaceable) backlight shutoff detection function is included. Backlight off/screen saving time can be set.			
	Life*3	Approx. 40,000 h or longer (Time when display luminance reaches 50% at the operating ambient temperature of 25°C)			
Touch panel	Number of touch keys	1,900 objects/screen (Matrix structure of 38 lines × 50 columns)	1,200 objects/screen (Matrix structure of 30 lines × 40 columns)		
	Key size	Minimum 16 × 16 dots (per key)			
	Number of objects that can be simultaneously touched	Maximum of 2 objects			
	Life	1 million times or more (operating force 0.98 max.)			
Human sensor	Detection length	None			
	Detection range	None			
	Detection delay time	None			
Memory*4	C drive	Built-in flash memory 9Mbytes (for storing project data and OS)		Built-in flash memory 5Mbytes (for storing project data and OS)	
	Life (Number of write times)	100,000 times			
Batery		GT-15BAT lithium battery (Option)			
	Backup target	Clock data and maintenance time notification data			
	Life	Approx. 5 years (Operating ambient temperature of 25°C)			

(Continued to next page)

Item		Specifications			
		GT1575-STBA, GT1575-STBD	GT1575-VTBA, GT1575-VTBD	GT1575-VNBA, GT1575-VNBD	GT1572-VNBA, GT1572-VNBD
Built-in interface	RS-232	RS-232, 1ch Transmission speed:115,200/57,600/38,400/19,200/9,600/4,800 bps Connector shape:D-sub 9-pin (Male) Application:For communicating with a controller or connecting a personal computer (Project data upload/download, OS installation, FA transparent function)			
	USB	USB (Full Speed 12 Mbps), 1ch Connector shape:Mini-B Application:For connecting a personal computer (Project data upload/download, OS installation and FA transparent function)			
	CF card	Compact flash slot, 1ch Connector shape: TYPE I Application: Data transfer, data storage			
	Option function board	For option function board mounting, 1ch			
	Multi-color display board	For multi-color display board mounting, 1ch		Cannot be used. (Even installed, 65536 colors will not be displayed.)	
	Communication unit/ Option unit	For communication unit/option unit mounting, 2ch			
Buzzer output		Single tone (tone length adjustable)			
Protective structure		Outside the enclosure: IP67*5 Inside the enclosure: IP2X			
External dimensions (Excluding USB environmental protective cover)		303(11.93)(W)×214(8.43)(H)×49(1.93)(D)[mm](inch)			
Panel cutting dimensions		289(11.38)(W)×200(7.87)(H)[mm](inch)			
Weight		2.4 kg (mounting fixtures are not included)	2.3 kg (mounting fixtures are not included)		
Compatible software package (GT Designer2 Version)		GT1575-STBA: 2.04E or later GT1575-STBD: 2.17T or later	GT1575-VTBA: 2.04E or later GT1575-VTBD: 2.17T or later	2.17T or later	

*1 Bright dots (always lit) and dark dots (unlit) may appear on a liquid crystal display panel. It is impossible to completely avoid this symptom, as the liquid crystal display comprises of a great number of display elements. Please note that these dots appear due to its characteristic and are not caused by product defect.

*2 Full-color display (66536 colors) is available when the multi-color display board is mounted. (☞ 8.4 Multi-Color Display Board)

*3 The GOT screen saving/backlight off function prevents images from becoming permanently etched on the display screen and increases the backlight life.

*4 ROM in which new data can be written without deleting the written data.

*5 Compliant with IP67 when the USB environmental protection cover is attached. Compliant with IP2X at the USB interface only when a USB cable is connected. Note that this does not guarantee all users' operation environment.

3.2.4 GT1565-V, GT1562-VN

Item			Specifications	
			GT1565-VTBA, GT1565-VTBD	GT1562-VNBA, GT1562-VNBD
Display section[*1]	Type		TFT color liquid crystal (LCD of high intensity and wide angle view)	TFT color liquid crystal
	Screen size		8.4"	
	Resolution		640×480dots	
	Display size		171(6.73)(W)×128(5.04)(H)[mm](inch)	
	Display character		16-dot standard font: 40 characters × 30 lines 12-dot standard font: 53 characters × 40 lines	
	Display color		256color/65536color[*2]	16color
	Display angle		Left/Right : 65degrees Top : 50 degrees Bottom : 60 degrees	Left/Right : 45degrees Top : 20 degrees Bottom : 20 degrees
	Intensity of LCD only		380[cd/m^2]	150[cd/m^2]
	Intensity adjustment		8-level adjustment	4-level adjustment
	Life		Approx. 41,000 h (Operating ambient temperature: 25°C)	
Backlight			Cold cathode fluorescent tube (replaceable) backlight shutoff detection function is included. Backlight off/screen saving time can be set.	
	Life[*3]		Approx. 40,000 h or longer (Time when display luminance reaches 50% at the operating ambient temperature of 25°C)	
Touch panel	Numbers of touch key		1,200 objects/screen (Matrix structure of 30 lines × 40 columns)	
	Key size		Minimum 16 × 16 dots (par key)	
	Number of objects that can be simultaneously touched		Maximum of 2 objects	
	Life		1 million times or more (operating force 0.98N max.)	
Human sensor	Detection length		None	
	Detection range		None	
	Detection delay time		None	
Memory[*4]	C drive		Built-in flash memory 9Mbytes (for string project data and OS)	Built-in flash memory 5Mbytes (for string project data and OS)
		Life (Number of write times)	100,000 times	
Battery			GT-15BAT lithium battery (Option)	
	Backup target		Clock data and maintenance time notification data	
	Life		Approx. 5 years (Operating ambient temperature of 25°C)	

(Continued to next page)

Item		Specifications	
		GT1565-VTBA, GT1565-VTBD	GT1562-VNBA, GT1562-VNBD
Built-in interface	RS-232	RS-232, 1ch Transmission speed : 115,200/57,600/38,400/19,200/9,600/4,800 bps Connector shape : D-sub 9-pin (Male) Application : For communicating with a controller or connecting a personal computer (Project data upload/download, OS installation and FA transparent function)	
	USB	USB (Full Speed 12 Mbps), 1ch Connector shape : Mini-B Application : For communicating a personal computer (Project data upload/download, OS installation and FA transparent function)	
	CF card	Compact flash slot, 1ch Connector shape : TYPE 1 Application : Data transfer, data storage	
	Option function board	For option function board mounting, 1ch	
	Multi-color display board	For multi-color display board mounting, 1ch	Cannot be used. (Even installed, 65536 colors will not be displayed.)
	Communication unit/ Option unit	For communication unit/option unit mounting, 2ch	
Buzzer output		Single tone (tone length adjustable)	
Protective structure		Outside the enclosure: IP67*5 Inside the enclosure: IP2X	
External dimensions (Excluding USB environmental protective cover)		241(9.49)(W)×190(7.48)(H)×52(2.05)(D)[mm](inch)	
Panel cutting dimensions		227(8.94)(W)×176(6.93)(H)[mm](inch)	
Weight		1.9 kg (mounting fixtures are not included)	
Compatible software package (GT Designer2 Version)		GT1565-VTBA:2.04E or later, GT1565-VTBD:2.17T or later	2.17T or later

*1 Bright dots (always lit) and dark dots (unlit) may appear on a liquid crystal display panel. It is impossible to completely avoid this symptom, as the liquid crystal display comprises of a great number of display elements. Please note that these dots appear due to its characteristic and are not caused by product defect.

*2 Full-color display (66536 colors) is available when the multi-color display board is mounted. (☞ 8.4 Multi-Color Display Board)

*3 The GOT screen saving/backlight off function prevents images from becoming permanently etched on the display screen and increases the backlight life.

*4 ROM in which new data can be written without deleting the written data.

*5 Compliant with IP67 when the USB environmental protection cover is attached. Compliant with IP2X at the USB interface only when a USB cable is connected. Note that this does not guarantee all users' operation environment.

3.3 Power Supply Specifications

The following describes the power supply specifications for the GT51.

☞ • 3.3.1 For GOTs powered from the 100 to 240VAC power supply

• 3.3.2 For GOTs powered from the 24VDC power supply

Remark

Operation at momentary failure

• If an instantaneous power failure occurs in the power supply and continues for more than the permissible period, the GOT will be reset.

• Make sure to power on the unit more than 5 seconds after power-off.

3.3.1 For GOTs powered from the 100 to 240VAC power supply

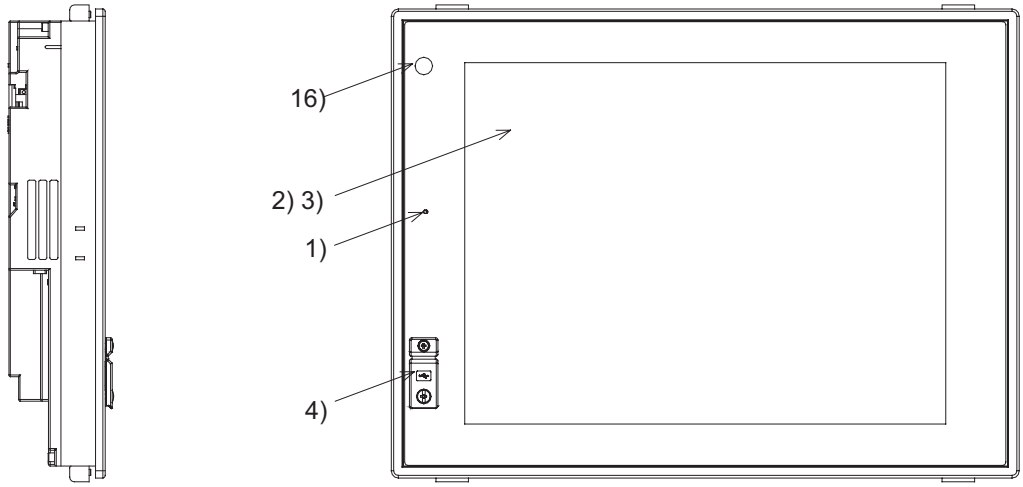
Item	Specifications		
	GT1595-XTBA	GT1585-STBA	GT1575-STBA, GT1575-VTBA, GT1575-VNBA, GT1572-VNBA, GT1565-VTBA, GT1562-VNBA
Input power supply voltage	100 to 240VAC (+10% -15%)		
Input frequency	50/60Hz ± 5%		
Input max. apparent power	110VA (maximum load)	90VA (maximum load)	
Power consumption	51W or less	28W or less	26W or less
At backlight off	28W or less	20W or less	
Inrush current	50A or less (4ms) (maximum load)	45A or less (4ms) (maximum load)	40A or less (4ms) (maximum load)
Permissible instantaneous power failure time	20ms (100VAC or longer)		
Noise immunity	1,500Vp-p noise voltage, 1μs noise width (when measuring with a noise simulator under 25 to 60Hz noise frequency)		
Dielectric withstand voltage	1500VAC for 1 minute across AC external terminals and earth		
Insulation resistance	10MΩ or larger by insulation resistance tester		
Applicable wire size	0.75 to 2 [mm^2]		
Applicable solderless terminal	Solderless terminal for M3 screw RAV1.25-3, V2-S3.3, V2-N3A, FV2-N3A		
Applicable tightening torque (Terminal block terminal screw)	0.5 to 0.8 [N•m]		

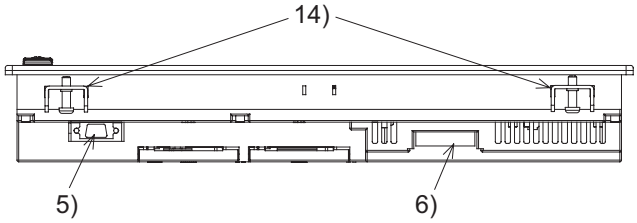
3.3.2 For GOTs powered from the 24VDC power supply

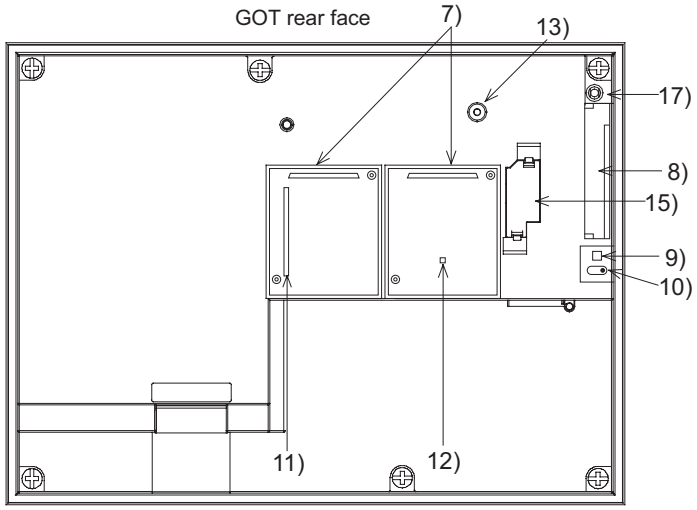
Item		Specifications	
		GT1585-STBD	GT1575-STBD, GT1575-VTBD, GT1575-VNBA, GT1572-VNBA, GT1565-VTBD, GT1562-VNBA
Input power supply voltage		24VDC (+25%, -20%)	
Power consumption		31W or less	26W or less
	At backlight off	20W or less	
Inrush current		115A or less (1ms) (maximum load)	
Permissible instantaneous power failure time		10 ms or less	
Noise immunity		500Vp-p noise voltage, 1 μs noise width (when measuring with a noise simulator under 25 to 60Hz noise frequency)	
Dielectric withstand voltage		500VAC for 1 minute across DC external terminals and earth	
Insulation resistance		10MΩ or larger by insulation resistance tester	
Applicable wire size		0.75 to 2 [mm²]	
Applicable solderless terminal		Solderess terminal for M3 screw RAV1.25-3, V2-S3.3, V2-N3A, FV2-N3A	
Applicable tightening torque (Terminal block terminal screw)		0.5 to 0.8 [N•m]	

4. PART NAME AND SETTINGS

4.1 Part Names and Settings of the GT1595







No.	Name	Description
1)	POWER LED	Lit in green : Power is correctly supplied Lit in orange : Screen saving Blinks in orange/green : Blown back light bulb Not lit : Power is not supplied
2)	Display screen	Displays the Utility and the user creation screen.
3)	Touch key	For operating the touch switches in the Utility and the user creation screen
4)	USB interface	For connecting a personal computer (Connector type: MINI-B)
5)	RS-232 interface	For communicating with a controller or connecting a personal computer (Connector type: D sub 9-pin)
6)	Power terminal	Power input terminal, LG terminal, FG terminal
7)	Extension unit interface	For installing a communication unit
8)	CF card interface	For installing a CF card
9)	CF card access LED	Lit : CF card accessed Not lit : CF card not accessed
10)	CF card access switch	Used for stopping the access to the CF card before removing the CF card from the GOT ON : CF card being accessed (CF card removal prohibited) OFF : CF card not accessed (CF card removal possible)
11)	Optional function board interface	For installing the optional function board
12)	Multi-color display board interface	For installing the multi-color display board
13)	Reset switch	Hardware reset switch (Inoperative for bus connection)
14)	Hole for unit installation fitting	Hole for inserting the unit installation fitting
15)	Battery holder	Houses the battery.
16)	Human sensor	Sensor that detects human movement
17)	Installation switch	Used for OS installations at the GOT startup

Remark

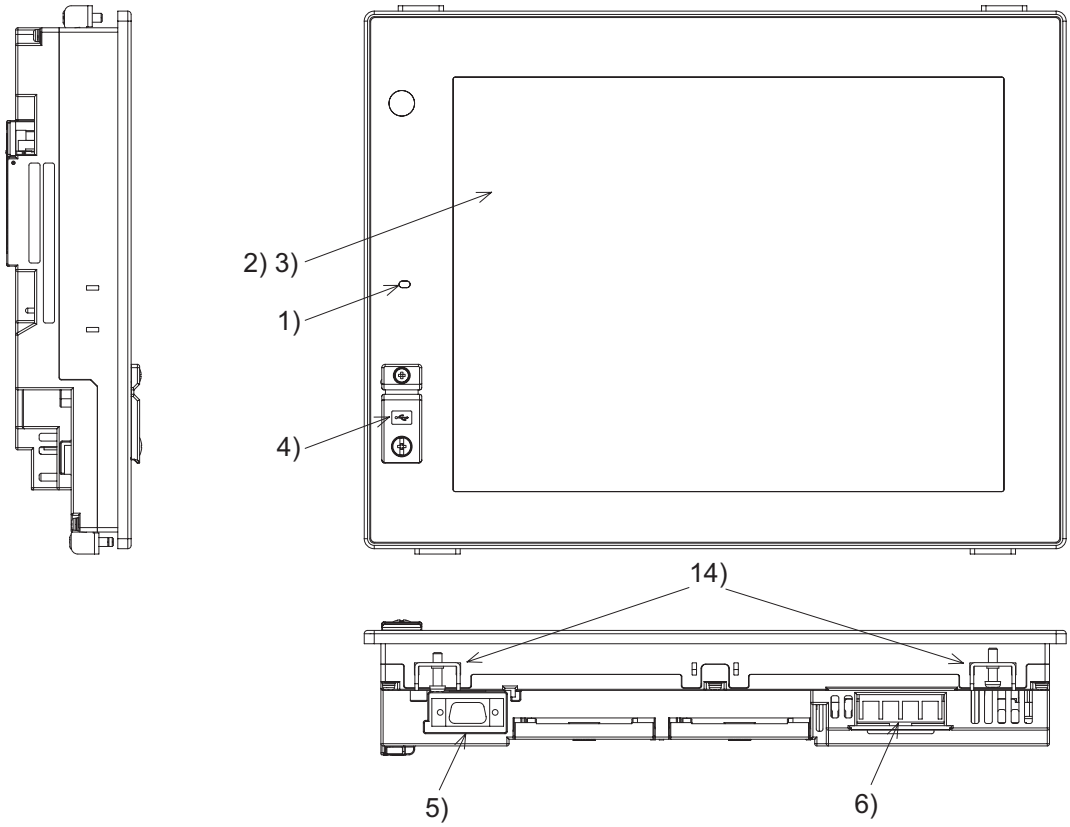
Connector used for the RS-232 interface

The specification of the cconnector used for the RS-232 interface of GT1595 is as follows.

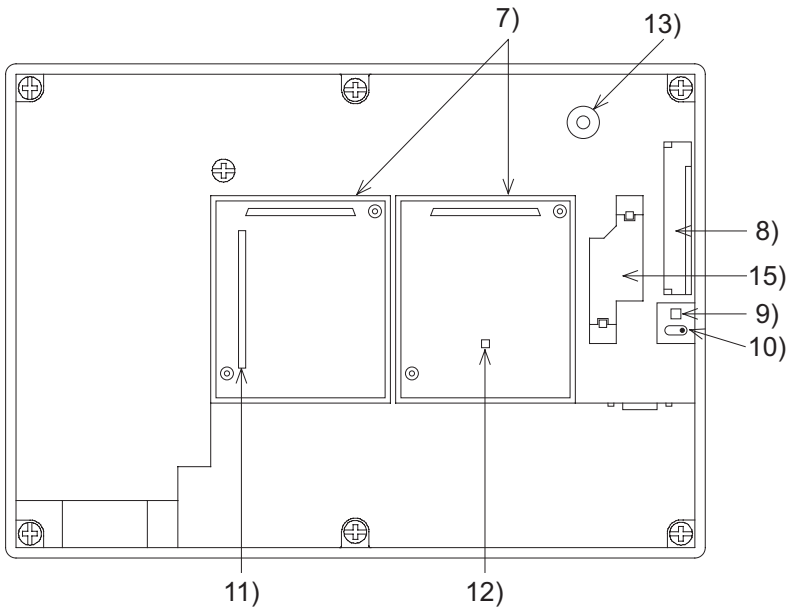
Manufacturer :DDK Ltd.

Mode name :17LE-23090-27 (D3CC) or equivalent product

4.2 Part Names and Settings of the GT1585



GOT rear face



No.	Name	Description
1)	POWER LED	Lit in green : Power is correctly supplied Lit in orange : Screen saving Blinks in orange/green : Blown back light bulb Not lit : Power is not supplied
2)	Display screen	Displays the utility and the user creation screen.
3)	Touch key	For operating the touch switches in the utility and the user creation screen
4)	USB interface	For connecting a personal computer (Connector type: MINI-B)
5)	RS-232 interface	For communicating with a controller or connecting a personal computer (Connector type :D sub 9-pin)
6)	Power terminal	Power input terminal, LG terminal, FG terminal
7)	Extension unit interface	For installing a communication unit
8)	CF card interface	For installing a CF card
9)	CF card access LED	Lit : CF card accessed Not lit : CF card not accessed
10)	CF card access switch	Used for stopping the access to the CF card before removing the CF card from the GOT ON : CF card being accessed (CF card removal prohibited) OFF : CF card not accessed (CF card removal possible)
11)	Optional function board interface	For installing the optional function board
12)	Multi-color display board interface	For installing the multi-color display board
13)	Reset switch	Hardware reset switch (Inoperative for bus connection)
14)	Hole for unit installation fitting	Hole for inserting the unit installation fitting
15)	Battery holder	Houses the battery.
16)	Human sensor	Sensor that detects human movement

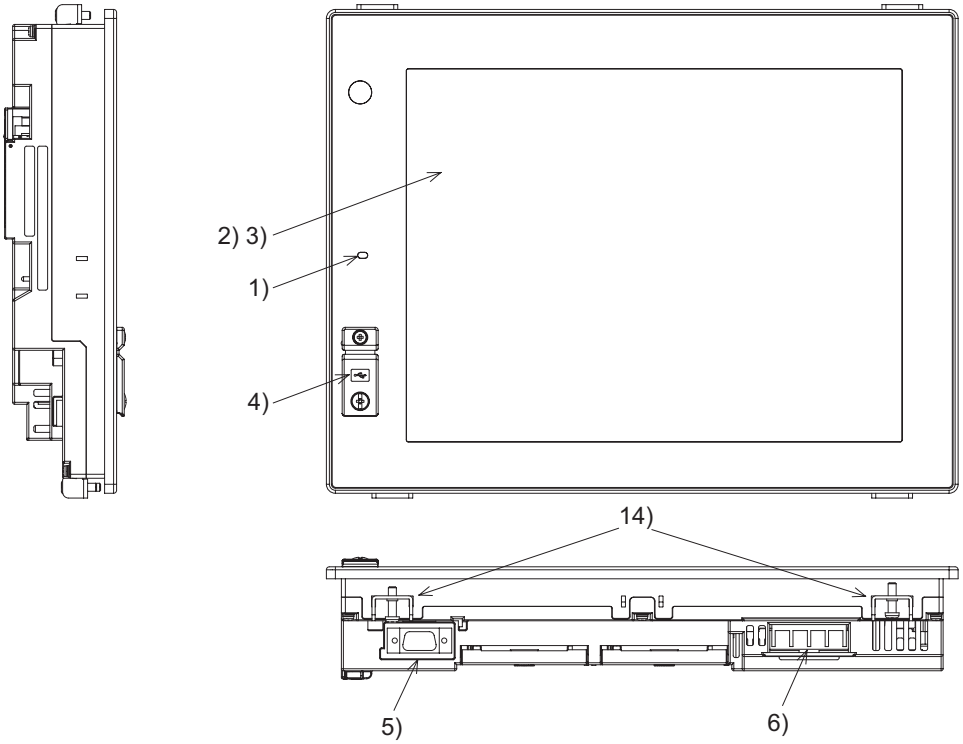
Remark

Connector used for the RS-232 interface

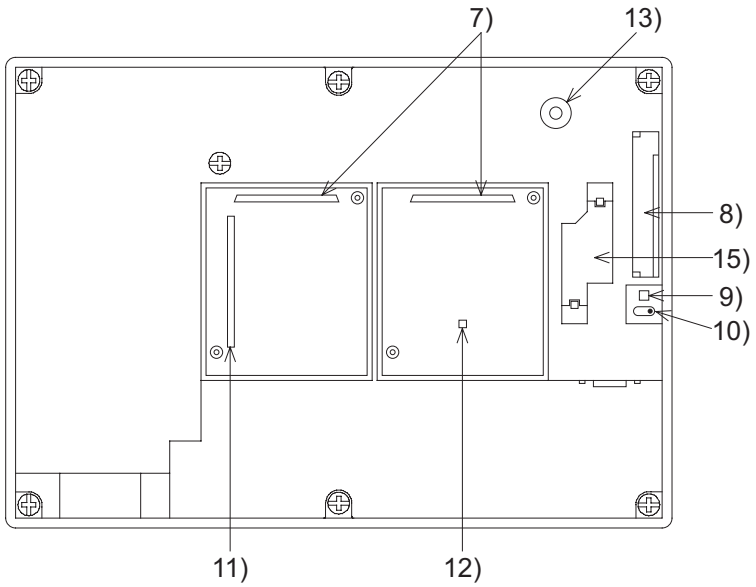
The specification of the connector used for the RS-232 interface of GT1585 is as follows.

GOT model name	Hardware version	Connector
GT1585-STBA	B (April, 2005) or before	Manufacturer: Honda Tsushin Kogyo Co., Ltd. Model name: GM-C9RMDU11 or equivalent product
	C (March, 2005) or later	Manufacturer: DDK Ltd. Model name: 17LE-23090-27 (D4CK) or equivalent product
GT1585-STBD	A (July, 2005) or later	

4.3 Part Names and Settings of the GT157□



GOT rear face



No.	Name	Description
1)	POWER LED	Lit in green : Power is correctly supplied Lit in orange : Screen saving Blinks in orange/green : Blown back light bulb Not lit : Power is not supplied
2)	Display screen	Displays the utility and the user creation screen.
3)	Touch key	For operating the touch switches in the utility and the user creation screen
4)	USB interface	For connecting a personal computer (Connector type: MINI-B)
5)	RS-232 interface	For communicating with a controller or connecting a personal computer (Connector type: D sub 9-pin)
6)	Power terminal	Power input terminal, LG terminal, FG terminal
7)	Extension unit interface	For installing a communication unit
8)	CF card interface	For installing a CF card
9)	CF card access LED	Lit : CF card accessed Not lit : CF card not accessed
10)	CF card access switch	Used for stopping the access to the CF card before removing the CF card from the GOT ON : CF card being accessed (CF card removal prohibited) OFF : CF card not accessed (CF card removal possible)
11)	Optional function board interface	For installing the optional function board
12)	Multi-color display board interface	For installing the multi-color display board (For GT1575-VN and GT1572-VN, 65536 color display is not supported even with the multi-color display board installed.)
13)	Reset switch	Hardware reset switch (Inoperative for bus connection)
14)	Hole for unit installation fitting	Hole for inserting the unit installation fitting
15)	Battery holder	Houses the battery.

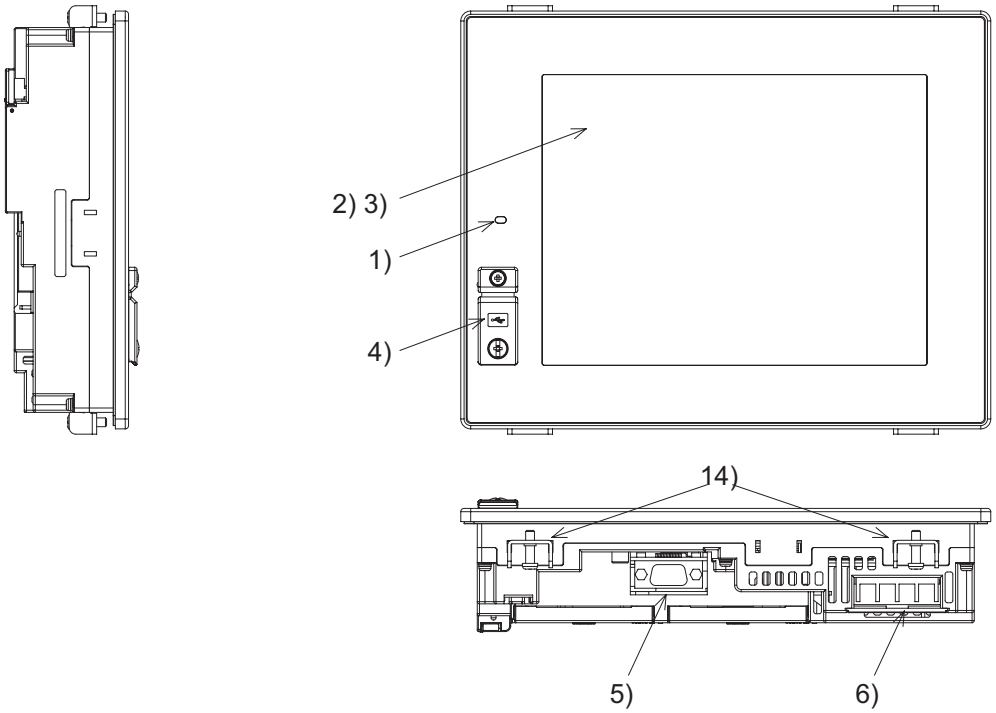
Remark

Connector used for the RS-232 interface

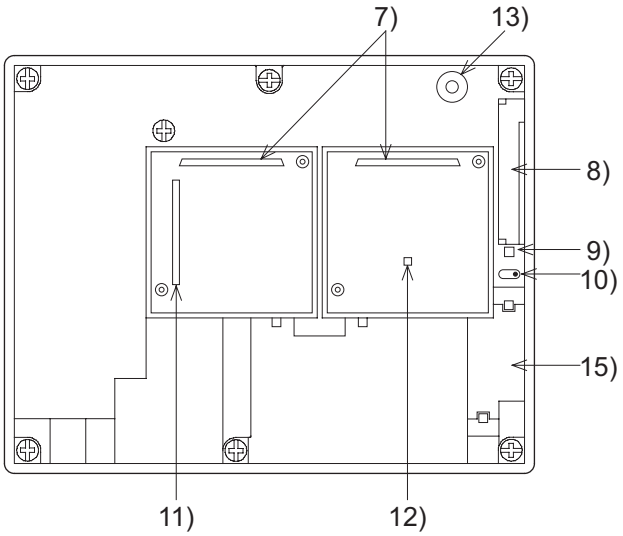
The specification of the connector used for the RS-232 interface of GT157□ is as follows.

GOT model name	Hardware version	Connector
GT1575-STBA	B (April, 2005) or before	Manufacturer: Honda Tsushin Kogyo Co., Ltd. Model name: GM-C9RMDU11 or equivalent product
	C (March, 2005) or later	Manufacturer: DDK Ltd. Model name: 17LE-23090-27 (D4CK) or equivalent product
GT1575-STBD	A (July, 2005) or later	
GT1575-VTBA	D (April, 2005) or before	Manufacturer: Honda Tsushin Kogyo Co., Ltd. Model name: GM-C9RMDU11 or equivalent product
	E (March, 2005) or later	Manufacturer: DDK Ltd. Model name: 17LE-23090-27 (D4CK) or equivalent product
GT1575-VTBD	A (July, 2005) or later	
GT1575-VNBA	A (July, 2005) or later	
GT1575-VNBD	A (July, 2005) or later	
GT1572-VNBA	A (September, 2005) or later	
GT1572-VNBD	A (September, 2005) or later	

4.4 Part Names and Settings of the GT156□



GOT rear face



No.	Name	Description
1)	POWER LED	Lit in green : Power is correctly supplied Lit in orange : Screen saving Blinks in orange/green : Blown back light bulb Not lit : Power is not supplied
2)	Display screen	Displays the utility and the user creation screen.
3)	Touch key	For operating the touch switches in the utility and the user creation screen
4)	USB interface	For connecting a personal computer (Connector type: MINI-B)
5)	RS-232 interface	For communicating with a controller or connecting a personal computer (Connector type: D sub 9-pin)
6)	Power terminal	Power input terminal, LG terminal, FG terminal
7)	Extension unit interface	For installing a communication unit
8)	CF card interface	For installing a CF card
9)	CF card access LED	Lit : CF card accessed Not lit : CF card not accessed
10)	CF card access switch	Used for stopping the access to the CF card before removing the CF card from the GOT ON : CF card being accessed (CF card removal prohibited) OFF : CF card not accessed (CF card removal possible)
11)	Optional function board interface	For installing the optional function board
12)	Multi-color display board interface	For installing the multi-color display board (For GT1562-VN, 65536 color display is not supported even with the multi-color display board installed.)
13)	Reset switch	Hardware reset switch (Inoperative for bus connection)
14)	Hole for unit installation fitting	Hole for inserting the unit installation fitting
15)	Battery holder	Houses the battery.

Remark Connector used for the RS-232 interface

The specification of the connector used for the RS-232 interface of GT1565 is as follows.

Manufacturer: DDK Ltd.

Model name : 17LE-23090-27(D4CK) or corresponding product

5. EMC AND LOW VOLTAGE DIRECTIVE

For the products sold in European countries, the conformance to the EMC Directive, which is one of the European Directives, has been a legal obligation since 1996. Also, conformance to the Low Voltage Directive, another European Directives, has been a legal obligation since 1997.
Manufacturers who recognize their products must conform to the EMC and Low Voltage Directive are required to declare that their products conform to these Directives and put a "CE mark" on their products.

5.1 Requirements to Meet EMC Directive

EMC Directives are those which require "any strong electromagnetic force is not output to the external.: Emission (electromagnetic interference)" and "It is not influenced by the electromagnetic wave from the external.: Immunity (electromagnetic sensitivity)".
Items 5.1.1 thru 5.1.3 summarize the precautions to use GOT and configure the mechanical unit in order to match the EMC directives.
Though the data described herein are produced with our best on the basis of the requirement items and standards of the restrictions gathered by Mitsubishi, they do not completely guaranteed that all mechanical unit manufactured according to the data do not always match the above directives. The manufacturer itself which manufactures the mechanical unit must finally judge the method and others to match the EMC directives.

5.1.1 EMC directive

The standards of the EMC Directive are shown below.

Applied standard	Test standard	Test details	Standard value
EN61000-6-4 :2001	EN55011 Radiated noise[*1]	Electromagnetic emissions from the product are measured.	30M-230MHz QP: 30dBμV/m (30m in measurement range)[*2, *3] 230M-1000MHz QP: 37dBμV/m(30m in measurement range)[*2, *3]
	EN55011 Conducted noise[*1]	Electromagnetic emissions from the product to the power line is measured.	150k-500kHz QP:79dB, Mean:66dB[*2] 500k-30MHz QP:73dB, Mean:60dB[*2]
EN61131-2 :2003	EN61000-4-2 Electrostatic immunity[*1]	Immunity test in which static electricity is applied to the cabinet of the equipment.	±4kV Contact discharge ±8kV Aerial discharge
	EN61000-4-3 Radiated field AM modulation[*1]	Immunity test in which field is irradiated to the product.	80-1000MHz:10V/m 1.4-2GHz:10V/m 80%AM modulation@1kHz
	EN61000-4-4 Fast transient burst noise[*1]	Immunity test in which burst noise is applied to the power line and signal lines.	Power line:2kV Digital I/O(24V or higher):1kV (Digital I/O(24V or less)) > 250V (Analog I/O, signal lines) > 250V
	EN61000-4-5 Surge immunity[*1]	Immunity test in which lightening surge is applied to the product.	AC power type Power line (between line and ground): ±2kV Power line (between lines) : ±1kV Data communication port : ±1kV DC power type Power line (between line and ground): ±0.5kV Power line (between lines) : ±1kV
	EN61000-4-6 Conducted RF immunity[*1]	Immunity test in which a noise inducted on the power and signal lines is applied.	Power line: 3V Data communication port: 3V
	Instantaneous power failure and voltage dips immunity	Test for checking normal operations at instantaneous power failure	AC power type 0.5 cycle (interval 1s or more) DC power type 10 ms (interval 1s or more)
	Radiated RF immunity	Test for checking normal operations when the power supply unit input voltage is fluctuated.	AC power type 47Hz: 85V, 264V 63Hz: 85V, 264V DC power type 20.4V, 28.8V

Applied standard	Test standard	Test details	Standard value
EN61131-2 :2003	Third harmonic immunity	Test for checking normal operations when the AC power waveform mixed with third harmonic wave is input.	47Hz: 85V (phase 180°, distortion rate 10%) 63Hz: 132V (phase 0°, distortion rate 10.9%)
	External power supply fluctuation immunity	Test for checking if the unit becomes faulty with a transient voltage of the internal and external input sides of the power supply unit or unit power supply.	AC power type 47Hz: 85V 63Hz: 264V DC power type 19.2V, 30V

*1: The GOT is an open type device (device installed to another device) and must be installed in a conductive control panel.
The above test items are conducted in the condition where the GOT is installed on the conductive control panel and combined with the Mitsubishi PLC.

*2: QP: Quasi-peak value, Mean : Average value

*3: The above test items are conducted in the following conditions.
30M-230MHz QP: 40dBμV/m (10m in measurement range)
230M-1000MHz QP: 47dBμV/m (10m in measurement range)

5.1.2 Control panel

The GOT is an open type device (device installed to another device) and must be installed in a conductive control panel.
It not only assure the safety but also has a large effect to shut down the noise generated from GOT, on the control panel.

(1) Control panel

(a) The control panel must be conductive.

(b) When fixing a top or bottom plate of the control panel with bolts, do not coat the plate and bolt surfaces so that they will come into contact.
And connect the door and box using a thick grounding cable in order to ensure the low impedance under high frequency.

(c) When using an inner plate to ensure electric conductivity with the control panel, do not coat the fixing bolt area of the inner plate and control panel to ensure conductivity in the largest area as possible.

(d) Ground the control panel using a thick grounding cable in order to ensure the low impedance under high frequency.

(e) The diameter of cable holes in the control panel must be 10cm (3.94in.). In order to reduce the chance of radio waves leaking out, ensure that the space between the control panel and its door is small as possible.
Attach some EMI gaskets to fill up the space and suppress the leakage of radio waves.
Out test have been carried out on a panel having the damping characteristics of 37dB max. and 30dB mean (measured by 3m method with 30 to 300MHz).

(2) Connection of power and ground wires
Ground and power supply wires for the GOT must be connected as described below.

(a) Provide a grounding point near the GOT. Short-circuit the LG and FG terminals of the GOT (LG: line ground, FG: frame ground) and ground them with the thickest and shortest wire possible (The wire length must be 30cm (11.18in.) or shorter.) The LG and FG terminals function is to pass the noise generated in the PC system to the ground, so an impedance that is as low as possible must be ensured. As the wires are used to relieve the noise, the wire itself carries a large noise content and thus short wiring means that the wire is prevented from acting as an antenna.

Note) A long conductor will become a more efficient antenna at high frequency.

(b) The earth wire led from the earthing point must be twisted with the power supply wires. By twisting with the earthing wire, noise flowing from the power supply wires can be relieved to the earthing. However, if a filter is installed on the power supply wires, the wires and the earthing wire may not need to be twisted.

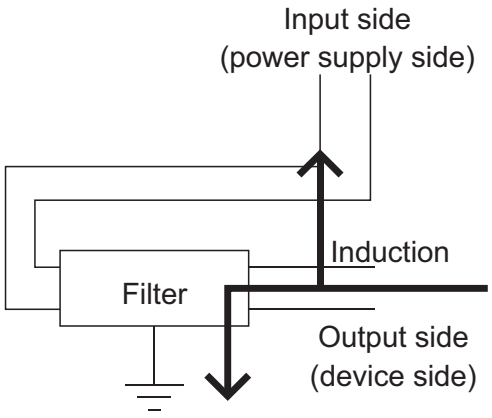
5.1.3 Noise filter (power supply line filter)

The noise filter (power supply line filter) is a device effective to reduce conducted noise. Except some models, installation of a noise filter onto the power supply lines is not necessary. However conducted noise can be reduced if it is installed. (The noise filter is generally effective for reducing conducted noise in the band of 10MHz or less.) Usage of the following filters is recommended.

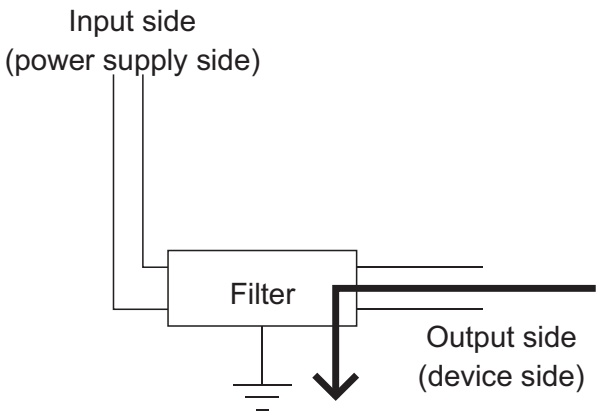
Model name	FN343-3/01	FN660-6/06	ZHC2203-11
Manufacturer	SCHAFFNER	SCHAFFNER	TDK
Rated current	3A	6A	3A
Rated voltage	250V		

The precautions required when installing a noise filter are described below.

(1) Do not install the input and output cables of the noise filter together to prevent the output side noise will be inducted into the input side cable where noise has been eliminated by the noise filer.



(a) Installing the input and output cables together will cause noise induction.



(b) Separate the input cable from the output cable.

(2) Connect the noise filter's ground terminal to the control panel with the shortest cable as possible (approx. 10cm (3.94 in.) or less).

5.2 Requirements for Conpliance with the Low Voltage Directive

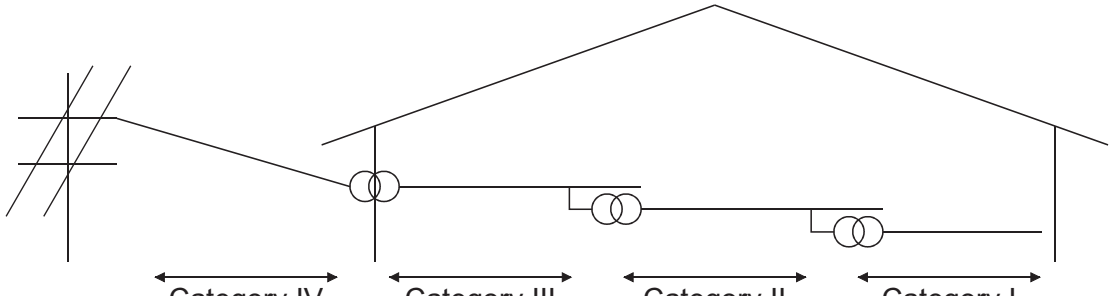
The Low Voltage Directive requires each device which operates with power supply ranging from 50VAC to 1000V and 75VDC to 1500V to satisfy necessary safety items.
In the Sections from 5.2.1 to 5.2.5, cautions on installation and wiring of the GOT to conform to the Low Voltage Directive requires are described.
We have put the maximum effort to develop this material based on the requirements and standards of the Directive that we have collected.
However, compatibility of the devices which are fabricated according to the contents of this manual to the above Directive is not guaranteed. Each manufacturer who fabricates such device should make the final judgement about the application method of the Low Voltage Directive and the product compatibility.

5.2.1 Standard subject to GOT

Standard applied to GOT:EN61131-2 Programmable controllers - Equipment requirements and tests
EN60950-1 Safety of Information Technology Equipment

5.2.2 Power supply

The insulation specification of the GOT was designed assuming installation category II. Be sure to use the installation category II power supply to the GOT.
The installation category indicates the durability level against surge voltage generated by lightning strike.
Category I has the lowest durability; category IV has the highest durability.



Installation Category

Category II indicates a power supply whose voltage has been reduced by two or more levels of isolating transformers from the public power distribution.

5.2.3 Control panel

Because the GOT is open type equipment (device designed to be stored within another device), be sure to use it only when installed in a control panel.

(1) Shock protection
In order to prevent those who are unfamiliar with power facility, e.g., an operator, from getting a shock, make sure to take the following measures on the control panel.

(a) Store the GOT within the control panel locked, and allow only those who are familiar with power facility to unlock the panel.

(b) Build the structure in order that the power supply will be shut off when the control panel is opened.

(2) Dustproof and waterproof features
The control panel also provides protection from dust, water and other substances. Insufficient ingression protection may lower the insulation withstand voltage, resulting in insulation destruction. The insulation in the GOT is designed to cope with the pollution level 2, so use in an environment with pollustion level 2 or better.

Pollution level1 :An environment where the air is dry and conductive dust does not exist.
Pollution level2 :An environment where conductive dust does not usually exist, but occasional temporary conductivity occurs due to the accumulated dust.
Generally, this is the level for inside the control panel equivalent a control room or on the floor of a typical factory.
Pollution level3 :An environment where conductive dust exits and conductivity may be generated due to the accumulated dust.
An environment for a typical factory floor.
Pollution level4 :Continuous conductivity may occur due to rain, snow, etc. An outdoor environment.

5.2.4 Grounding

The following ground terminal is applicable. Use it in the grounded status.
Be sure to ground the grounding for the safety reasons and EMC Directives.

Functional grounding : Improves the noise resistance.

5.2.5 External wiring

(1) External devices
When a device with a hazardous voltage circuit is externally connected to the GOT, select a model which complies with the Low Voltage Directive's requirements for isolation between the primary and secondary circuits.

(2) Insulation requirements
Dielectric withstand voltages are shown in the following table.

Reinforced Insulation Withstand Voltage
(Installation Category II, source : IEC664)

Rated voltage of hazardous voltage area	Surge withstand voltage (1.2/50μs)
150 VAC or below	2500V
300 VAC or below	4000V

5.3 EMC Directive-Compliant System Configuration

The information of the EMC Directive-compliant models is obtained from MELFANSweb homepage (http://wwwf2.mitsubishielectric.co.jp/melfansweb/english/index_e.htm).

5.3.1 GOT

Use a GOT with CE mark logo printed on the rating plate.

5.3.2 Connection method

Use the following methods to connect with the GOT to ensure compliance with the EMC Directive.

○ : Compliant with EMC Directive × : Not compliant with EMC Directive

Connection method	GT15
Bus connection	○
Direct connection to CPU	○
Computer link connection	○
MELSECNET/10 connection (PLC to PLC network)	×
CC-Link connection (intelligent device station)	×
CC-Link connection (via G4)	×
Ethernet connection	○
Other connections	○*2

*1: For details about each connection method, refer to the GOT1000 Series Connection Manual.

*2: When connecting the GOT to other controllers as a PLC manufactured by other company, create the cable (by the user) and configure the system to meet the EMC Directive specifications for the connected device.
(☞ 5.4.2 (4)PLC (manufactured by other company), microcomputer, temperature controller, inverter, servo amplifier or CNC connection)

Point

Connected devices

If connecting to the PLC or microcomputer other than Mitsubishi products (MELSEC-Q series, MELSEC-QnA series or MELSEC-A series) please refer to the EMC Directive compliance manual for that specific device.

5.3.3 When the communication unit is used

Use the following communication unit with the GOT to ensure compliance with the EMC Directive.
The GOT does not comply with the EMC Directive when connected with other than followings.

Connection method	Communication unit used	Hardware version of the communication unit (Production year and month)
Bus connection	GT15-QBUS	Version D or later (Oct., 2005)
	GT15-QBUS2 GT15-ABUS GT15-ABUS2	Version C or later (Oct., 2005)
	GT15-75QBUSL GT15-75QBUS2L GT15-75ABUSL GT15-75ABUS2L	Version G or later (Mar., 2005)
Direct connection to CPU	GOT RS-232 interface GT15-RS2T4-9P	Version A or later
Computer link connection	GOT RS-232 interface GT15-RS2T4-9P	Version A or later
Ethernet connection	GT15-J71E71-100	Version B or later (Mar., 2005)
Microcomputer connection	GOT RS-232 interface GT15-RS2T4-9P	Version A or later
Third party PLC connection	GOT RS-232 interface GT15-RS2T4-9P	Version A or later

The GOT does not comply with the EMC Directive when it is used with the following unit.

Product name	Model name
MELSECNET/10 communication unit	GT15-75J71LP23-Z, GT15-75J71BR13-Z
CC-Link communication unit	G15-75J61BT13-Z

5.3.4 Cables

(1) Applicable cables
Refer to the GOT1000 Series Connection Manual for the applicable cables for connecting a GOT and PLC.

(2) Adjusting a cable for the EMC Directive compliance
Modify the cables (including user-produced cable) to ensure compliance with the EMC Directive. For details, refer to Section 5.4.2.

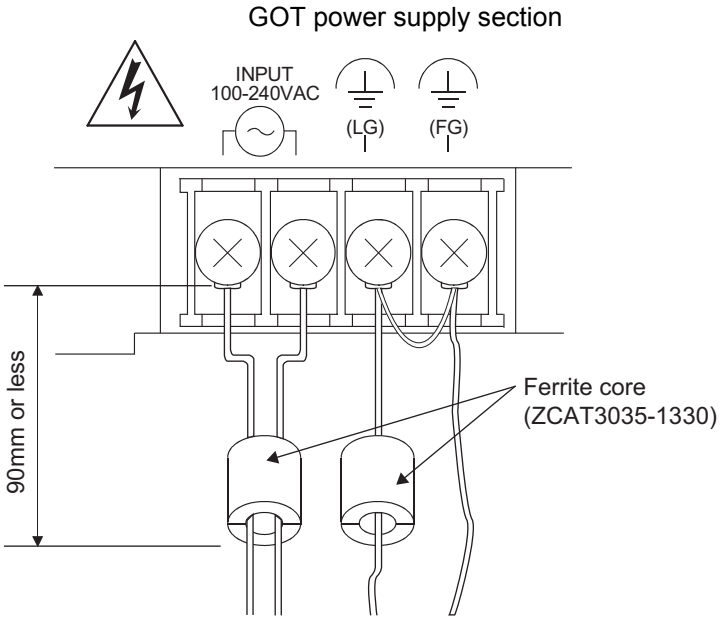
5.4 Precautions for Wiring/Connecting the EMC Directive-Compliant Product

Wire and connect GOT1000 series equipments as instructed below. If the GOT1000 series equipments are configured in a way different from the following instructions, the system may not comply with EMC directives.

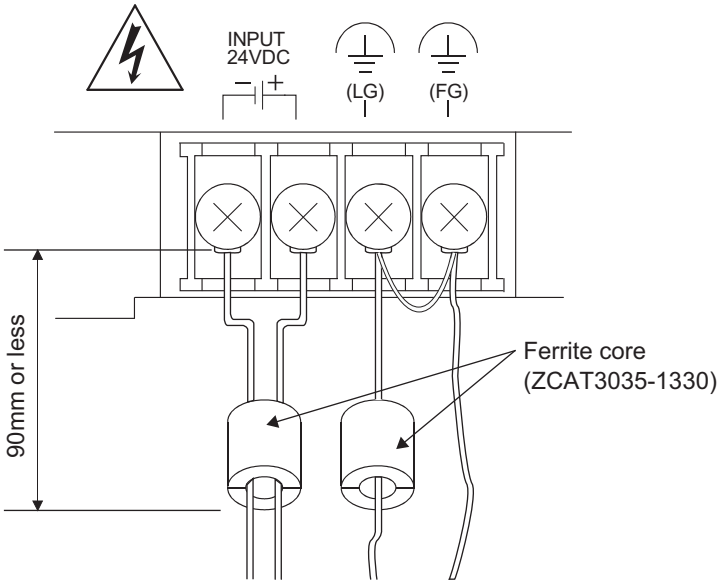
5.4.1 Power and ground wires wiring method

(1) Power and ground wires wiring method
Connect the power wire and connection cable as shown in the illustration, and be sure to attach a ferrite core (TDK Corporation type ZCAT3035-1330) within the range shown below.
Lead the power wire and ground wire as shown in Section 5.1.2 (2).
Always ground the LG and FG wires.

(a) 100-240VAC GOT power section



(b) 24VDC GOT power section



5.4.2 Processing connection cables

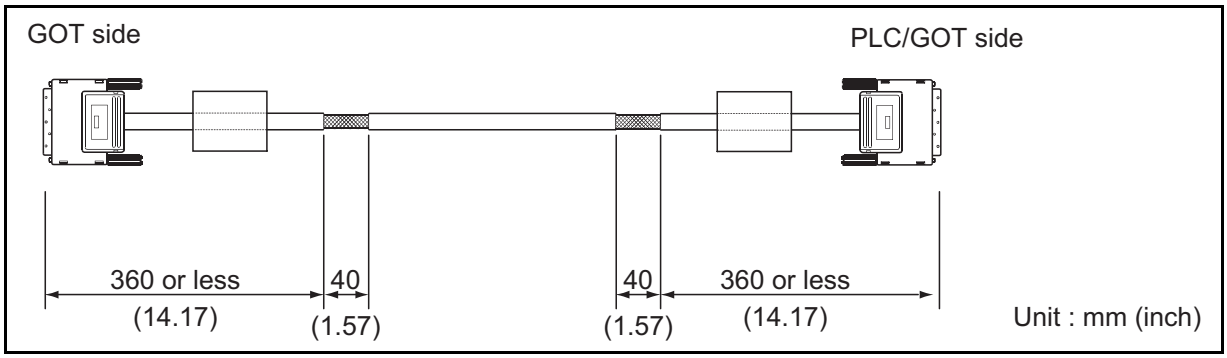
Process the cable used with the GOT with the following method.
When processing the cable, ferrite core, cable clamp and shielding material are required.
The cable clamp used by Mitsubishi Electric for the EMC specification compatibility test is shown below.

- TDK corporation brand ZCAT3035-1330 Ferrite Core
- Mitsubishi Electric Model AD75CK cable clamp
- Japan Zipper Tubing Co., Ltd. Zipper tube SHNJ type

(1) BUS connection cable

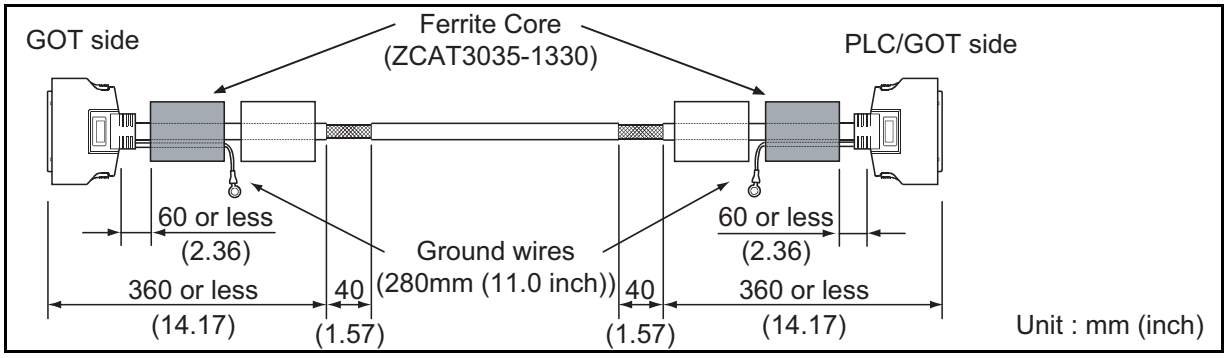
(a) For GT15-QC□B, GT15-QC□BS

- Peel the sheath (with the length shown below) at both ends of the cable, and expose the shield braided wire for grounding. (For grounding with cable clamps. (refer to Section 5.4.3.))



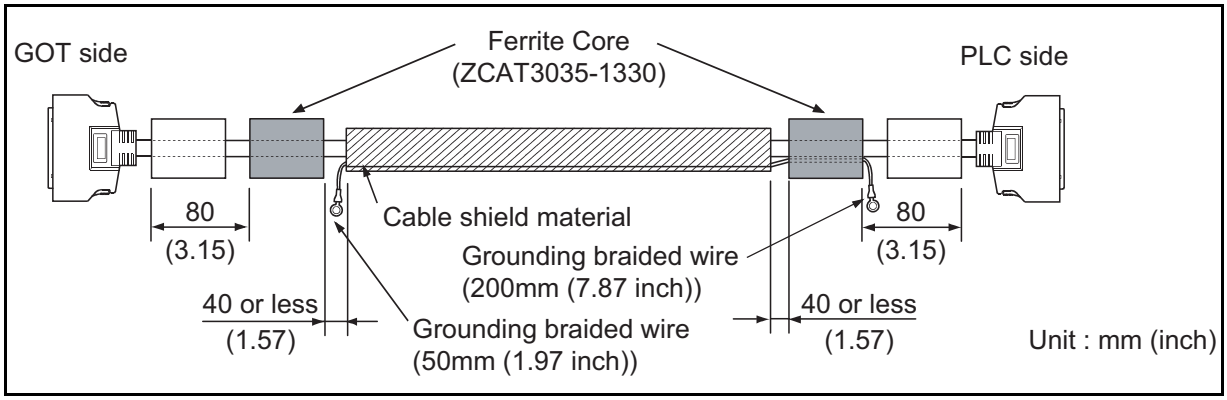
(b) For GT15-C□BS

- Cut the connection wire protruding from both ends of the cable to the lengths shown below.
- Attach the ferrite core to the cable in the position as illustrated below and insert the ground wire into the ferrite core.
- Peel the sheath (with the length shown below) at both ends of the cable, and expose the shield braided wire for grounding. (For grounding with cable clamps. (refer to Section 5.4.3.))



(c) For other bus connection cables

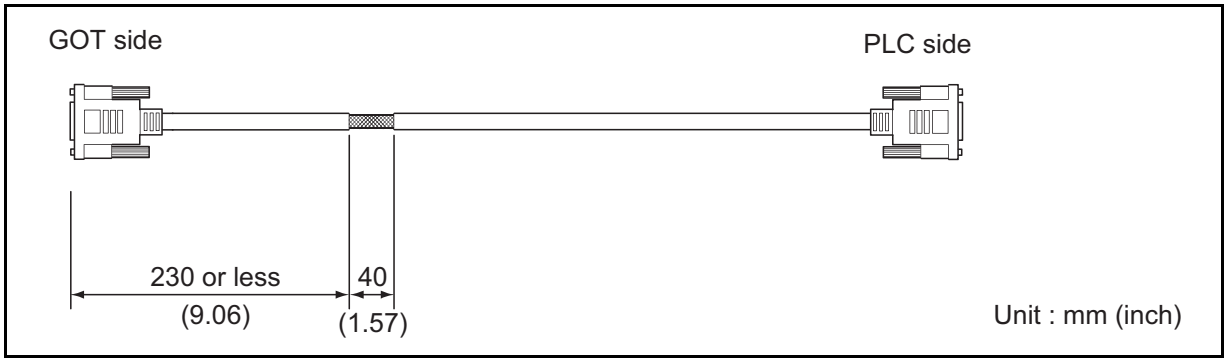
- Wind cable shield material around the cable, and pull out the grounding braided wire of the cable shield material with the length shown below.
- Attach the ferrite core to the cable in the position as illustrated below and insert the braided wire for grounding into the ferrite core.



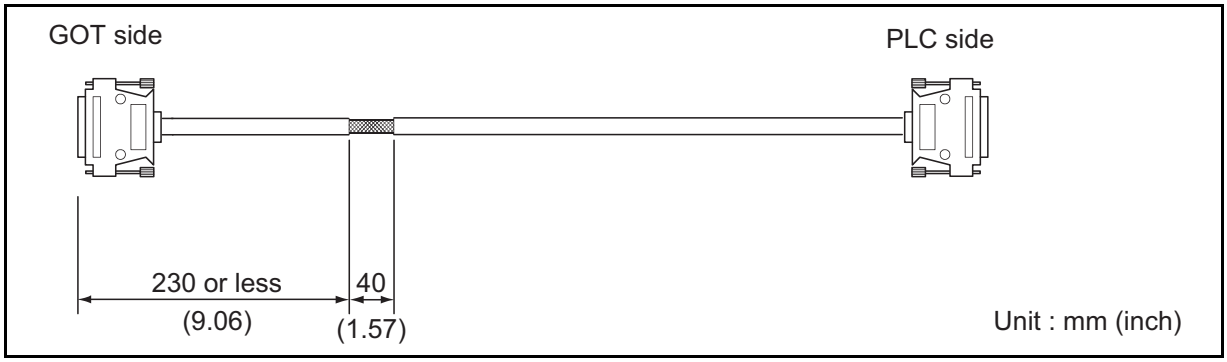
(2) CPU direct connection and computer link connection

- Peel the sheath (with the length shown below) of the cable to expose the shield braided wire for grounding. (For grounding with cable clamps (refer to Section 5.4.3))

(a) For RS-232 cable

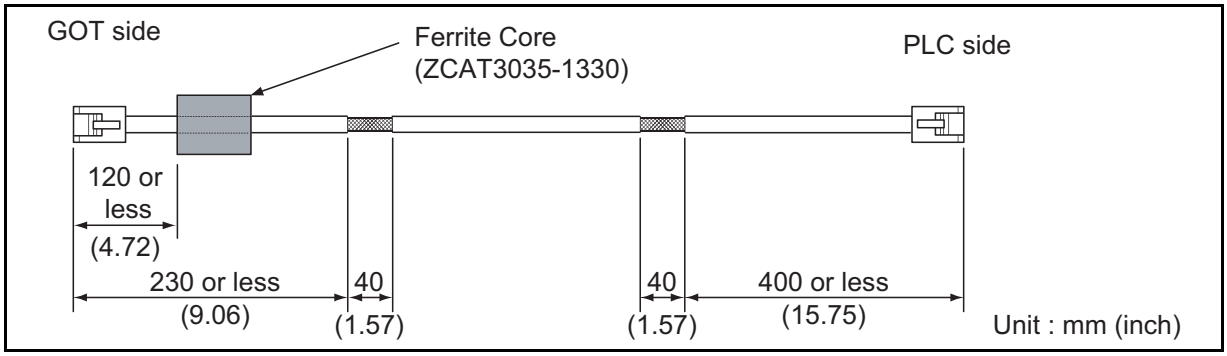


(b) RS-422 cable (For AC30/100/300R4-25P)



(3) Ethernet connection

- Strip the outer insulation layer at both ends of the cable by the length shown below to expose the braided shield for grounding. (For grounding with cable clamps. (refer to Section 5.4.3.))
- Attach the ferrite core to the cable in the position as illustrated below.



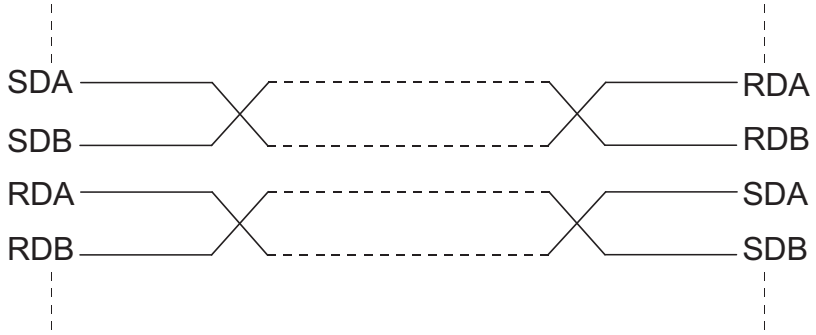
(4) PLC (manufactured by other company), microcomputer, temperature controller, inverter, servo amplifier or CNC connection
Produce the cable (RS-232 cable, RS-422 cable) for connecting the GOT to a controller with reference to the GOT1000 Series Connection Manual.

Point

Configure the system to meet the EMC Directive specifications for the connected device when connecting the GOT to a controller.
The following gives the instructions to ensure the machinery comply with the EMC Directive. However, the manufacturer of the machinery must finally determine how to make it comply with the EMC Directives: if it is actually compliant with the EMC Directives.

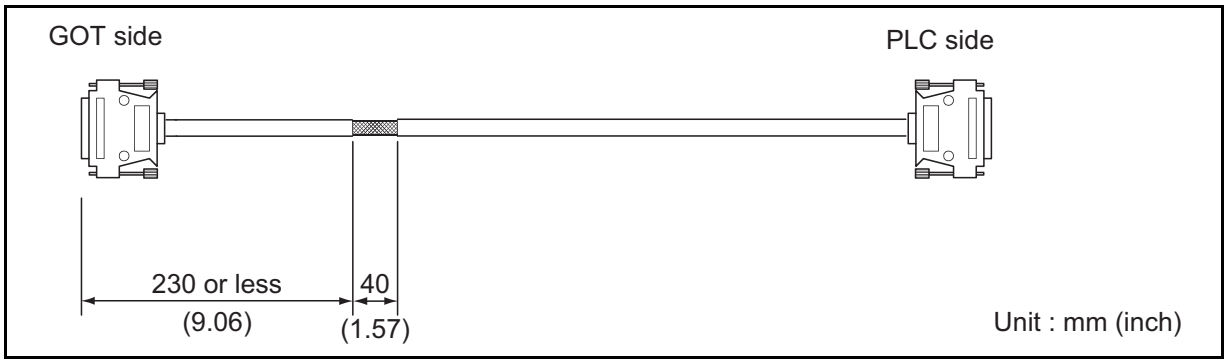
(a) For RS-422 cable

• Each signal wire (excluding SG and FG) should be made into a two power wires and connected, then twisted.



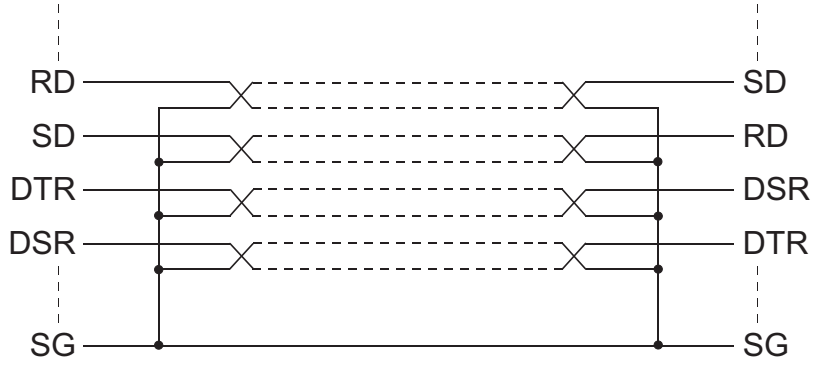
• Make the SG wire more than two wires and connect.

• Peel the sheath (with the length shown below) of the created cable to expose the shield braided wire for grounding. (For grounding with cable clamps (refer to Section 5.4.3))

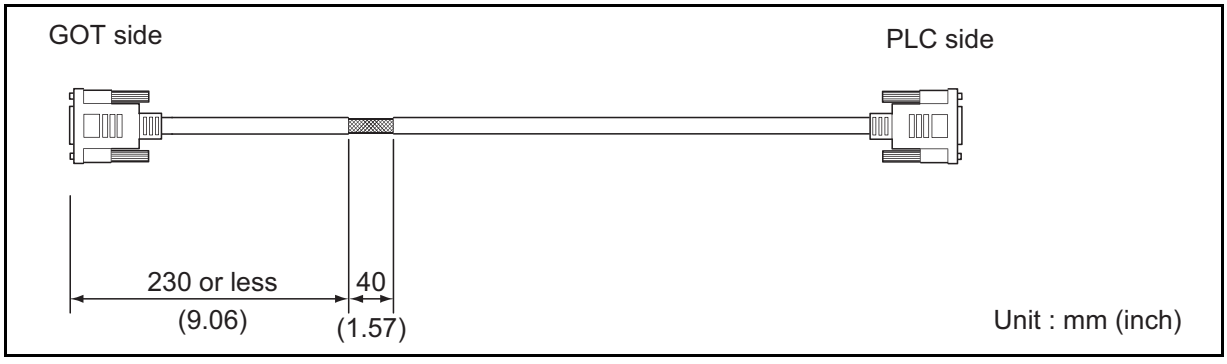


(b) For RS-232 cable

• Use a twisted pair style for each signal wire (except SG, FG) with SG.

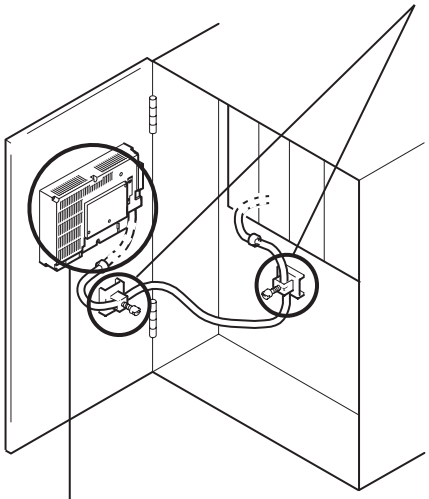


• Peel the sheath (with the length shown below) of the created cable to expose the shield braided wire for grounding. (For grounding with cable clamps (refer to Section 5.4.3))

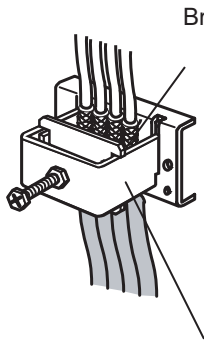


5.4.3 Grounding the cable

Ground the cable and grounding wire to the control panel where the GOT and base unit are installed.

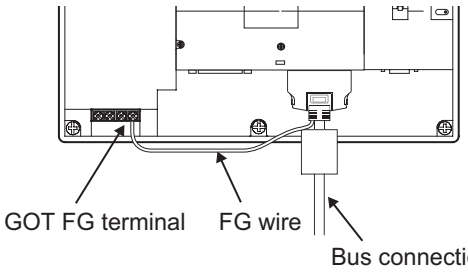


1) Ground the braided shield portion of the cable to the control panel with the cable clamp (AD75CK).



For the cable clamp attaching details, refer to AD75CK-type Cable Clamping Instruction Manual <IB-68682>.

a) For GT15-C□EXSS-1 and GT15-C□BS
Ground the ground wire to the FG terminal of the GOT power supply section.



b) For other bus connection cables
Ground the braided wire for grounding to the control panel by tightening a screw.

6. INSTALLATION

⚠CAUTION

- Use the GOT in the environment that satisfies the general specifications described in this manual.
  Do not expose the GOT to dust, lamp soot, conductive dust, corrosive gas, or combustible gas; high-temperature, condensing, wind or rain; or to vibrations and impact.
  Failure to do so can cause an electric shock, fire, malfunction or product damage or deterioration.
- Do not drop chips or wire scraps near the ventilation window of the GOT when processing screw holes or wiring.
  Failure to do so can cause a fire, failure or malfunction.
- Tighten the mounting screws within the specified torque range.
  Undertightening can cause the GOT to drop, short circuit or malfunction.
  Overtightening can cause a drop, short-circuit or malfunction due to the damage of the screws or the unit.
- Make sure to install the connection cable to the connector specified during the power OFF.
  Failure to do so may cause a malfunction due to the poor contact.

6.1 Control Panel Inside Dimensions for Mounting GOT

Mount the GOT onto the control panel while considering the control panel inside dimensions.

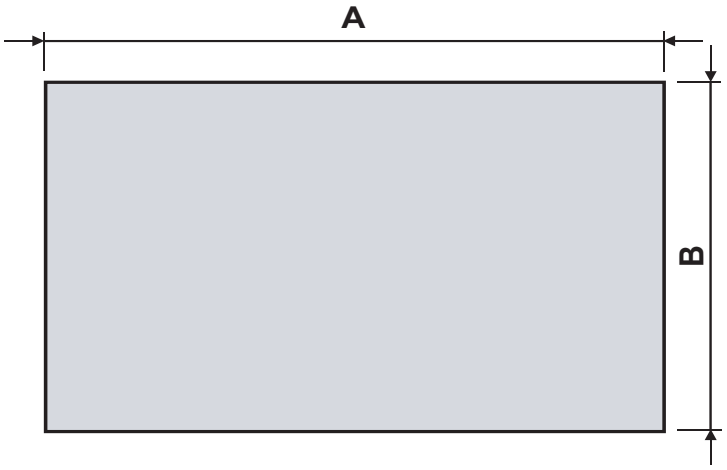
Point

Applicable cable

Some cables may need to be longer than the specified dimensions when connecting to the GOT.
Therefore, consider the connector dimensions and bending radius of the cable as well for installation.

6.2 Panel Cutting Dimensions

Make holes in the panel according to the dimensions list below.
Also, ensure 10mm spaces in upper and lower parts of the panel for mounting fixtures.

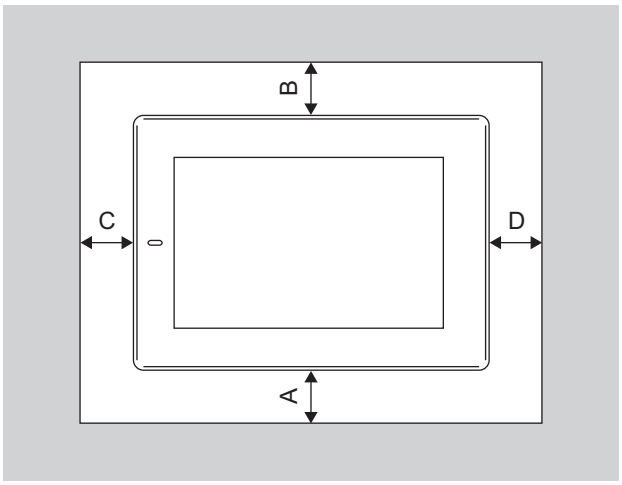


* Panel thickness: 2 to 4 mm or less

GOT	A [mm] (inch)	B [mm] (inch)
GT1595	383.5(15.1) (+2(0.08), 0(0))	282.5(11.12) (+2(0.08), 0(0))
GT1585	302(11.89) (+2(0.08), 0(0))	228(8.98) (+2(0.08), 0(0))
GT157☐	289(11.38) (+2(0.08), 0(0))	200(7.87) (+2(0.08), 0(0))
GT156☐	227(8.94) (+2(0.08), 0(0))	176(6.93) (+2(0.08), 0(0))

6.3 Mounting Position

When mounting the GOT, the following clearances must be left from the other device.



Type		GT1595	GT1585	GT157□	GT156□
A	GOT only or bus connection unit *1 fitted	50(1.97) or more [20(0.79) or more]		50(1.97) or more [31(1.22) or more]	50(1.97) or more [36(1.92) or more]
	Bus connection unit*2 or serial communication unit fitted	50(1.97) or more [20(0.79) or more]		50(1.97) or more [31(1.22) or more]	50(1.97) or more [36(1.42) or more]
	RS-422 Conversion unit is fitted	50(1.97) or more	51(2.01) or more	68(2.68) or more	73(2.87) or more
	Ethernet communication unit, MELSECNET/10 communication unit (coaxial), CC-Link communication unit fitted.	50(1.97) or more [20(0.79) or more]			
	MELSECNET/10 communication unit (optical) fitted.	50(1.97) or more [20(0.79) or more]	50(1.97) or more [26(1.02) or more]	50(1.97) or more [43(1.69) or more]	50(1.97) or more [48(1.89) or more]
B		80 or more (20 or more)			
C, D		50 or more (20 or more)			
E		100 or more (20 or more)			

Unit: mm (inch)

*1 For GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, or GT15-75ABUS2L only

*2 For GT15-QBUS, GT15-QBUS2, GT15-ABUS, or GT15-ABUS2 only

The values enclosed in parenthesis apply to the case where no other equipment generating radiated noise (such as a contactor) or heat is installed. However, keep the ambient temperature of the GOT to 55°C or lower even in such a case.

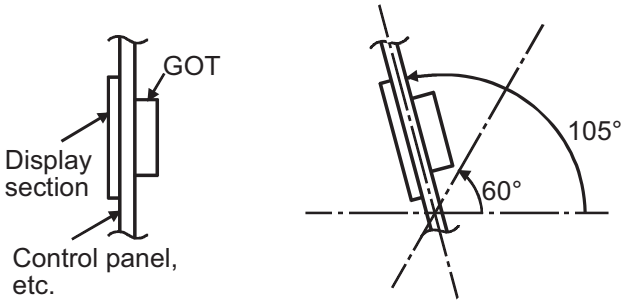
The required lead-in allowance for cables may be larger than the size of A above depending on the unit or cable used.

For the lead-in allowance for cables at the bottom of the GOT, refer to the following.

☞ Appendix 1 External Dimensionss

6.4 Control Panel Inside Temperature and Mounting Angle

When mounting the main unit to a control panel or similar, set the display section as shown below.
When the temperature inside the control panel is 40 to 55°C or less, the mounting angle should be in the range 60 to 105 degrees.

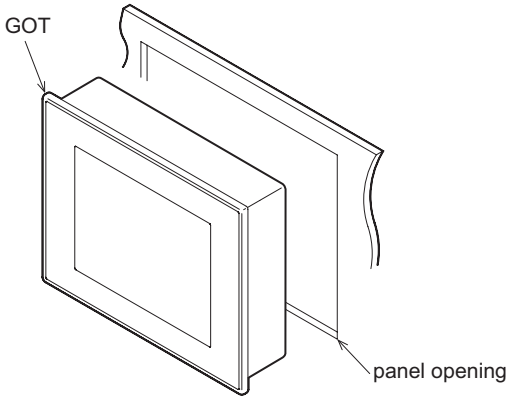


- The GOT will be deteriorated earlier if it is used at the mounting angle other than the above. Therefore, the temperature inside the control panel should be within 40°C.

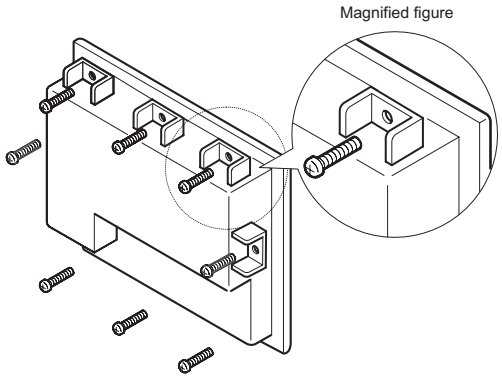
6.5 Installation Procedure

The GOT mounting procedure is as follows.
For the panel cutting dimensions of each GOT, refer to the following.
☞Section 6.2 Panel Cutting Dimensions

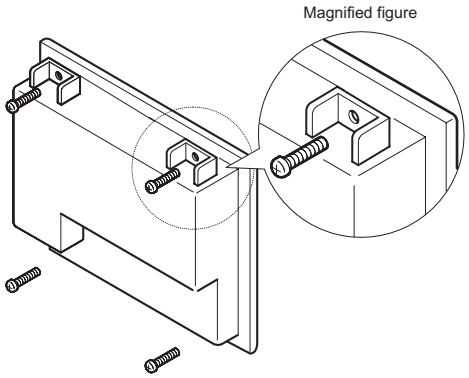
1 Insert the GOT into the panel opening from the front side.



2 Place the mounting fixtures (included with GOT) on the mounting fixture attaching part of the GOT, and fix them by tightening the mounting screws in the torque range of 0.36 to 0.48N·m.
(Failure to do so may distort the panel and make a surface waviness on the protective sheet.)



· For GT1595-X: Fix the GOT with 8 mounting fixtures.



· For other than GT1595-X: Fix the GOT with 4 mounting fixtures.

3 A protection film is attached on the display section of GOT prior to shipment.
Remove the film when the installation is compelted.

7. WIRING

DANGER

- Before starting wiring, always switch off the GOT power externally in all phases.
  Not doing so may cause an electric shock, product damage or malfunction.

CAUTION

- Please make sure to ground FG terminal and LG terminal of the GOT power supply section by applying Class D Grounding (Class 3 Grounding Method) or higher which is used exclusively for the GOT.
  Not doing so may cause an electric shock or malfunction.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal arrangement of the product.
  Not doing so can cause a fire or failure.
- Tighten the terminal screws of the GOT power supply section in the specified torque range.
  Undertightening can cause a short circuit or malfunction.
  Overtightening can cause a short circuit or malfunction due to the damage of the screws or the GOT.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the GOT. Not doing so can cause a fire, failure or malfunction.

This section describes wiring to the GOT power supply section.
For the connection to a controller, refer to the following manual.

☞ GOT1000 Series Connection Manual

For external dimensions of connection cable, refer to the following.

☞ Appendix 1 External Dimensions

Remark

General preventive measures against noise

There are two kinds of noises: Radiated noise that is transmitted into the air and Conductive noise that is directly transmitted along connected lines.
Countermeasures must be taken considering both kinds of noises and referring to the following 3 points.

(1) Protecting against noise
  (a) Keep signal lines away from noise sources such as a power cable or a high-power drive circuit.
  (b) Shield the signal lines.

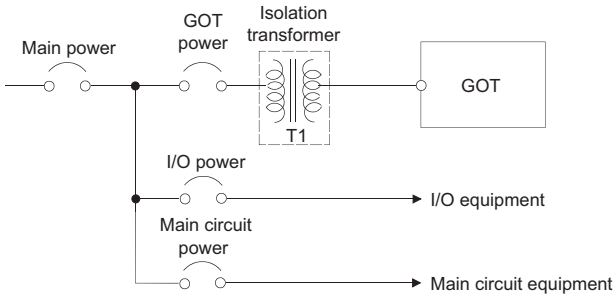
(2) Reducing generated noise
  (a) Use a noise filter, etc. to reduce the level of the noise generated due to a source such as a high-power motor drive circuit.

(3) Releasing noise to the ground
  (a) Make sure to connect the ground cable to the ground.
  (b) Use a short and thick cable to lower its impedance.
  (c) Ground the power system and the control system separately.

7.1 Power Supply Wiring

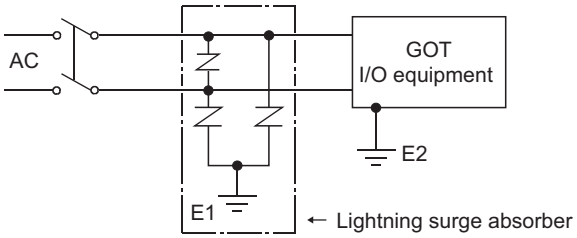
- Make wiring connections to the power supply, I/O equipment and power equipment separately by system as shown below.
  When frequent noise is identified, connect an isolation transformer.

  Wiring diagram for power supply



- Twist 100V AC, 200V AC or 24V DC cable as closely as possible and connect the cable of the minimum length between modules.
  Also, use the thickest cable as possible (Max. 2mm^2) to minimize the voltage drop.
  Use M3 solderless terminals and securely tighten them with a tightening torque of 0.5 to 0.8N•m so that no problem will result.
- Separate the 100V AC, 200V AC or 24V DC cable from the main circuit lines (high voltage, large current) and/or I/O signal lines.
  Keep a distance of 100mm or more.
- As measures against surge due to lightning, connect a lightning surge absorber as shown below.

  Lightning surge absorber connection



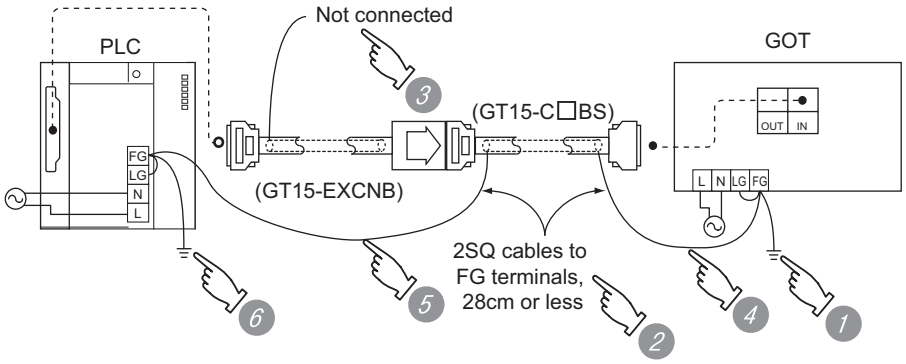
Point

1. Separate the grounding of the lightning surge absorber (E1) from the grounding of the GOT (E2).
2. Select an appropriate lightning surge absorber so that the supply voltage does not exceed the maximum allowable circuit voltage of the surge absorber even when it rises to the maximum.

7.2 Wiring of Connection Cables

- Keep the connection cables away from the main circuit lines (high voltage, large current) or I/O signal lines.
- When using GT15-C□EXSS-1 or GT15C□BS, perform the grounding in the following steps.

(1) When using GT15-C□EXSS-1



1. Connect the LG and FG terminals of the terminal block on the GOT unit power and ground them with a cable.
2. Use the GT15-C□BS's FG cable of 28cm or less.
3. Do not connect the GT15-EXCNB's FG ground cable.
4. Connect the GT15-C□BS's FG cable on the GOT side to FG of the GOT unit power's terminal block.
5. Connect the GT15-C□BS's FG cable on the PLC side to FG of the PLC's power supply module.
6. Connect the LG and FG terminals of the terminal block on the PLC and ground them with a cable.

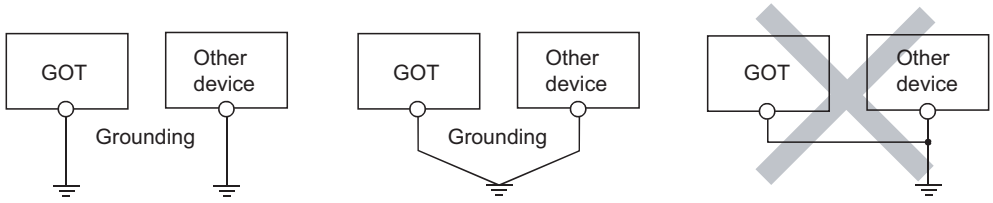
(2) When using GT15-C□BS

For the both side GOTs, connect the LG and FG terminals of the terminal block on the GOT unit power and ground them with a cable.

7.3 Grouding

Make sure to carry out the followings for grounding.

- Carry out the independent grounding if possible.
- If the independent grounding is impossible, carry out the shared grounding as shown in fig.2) below.



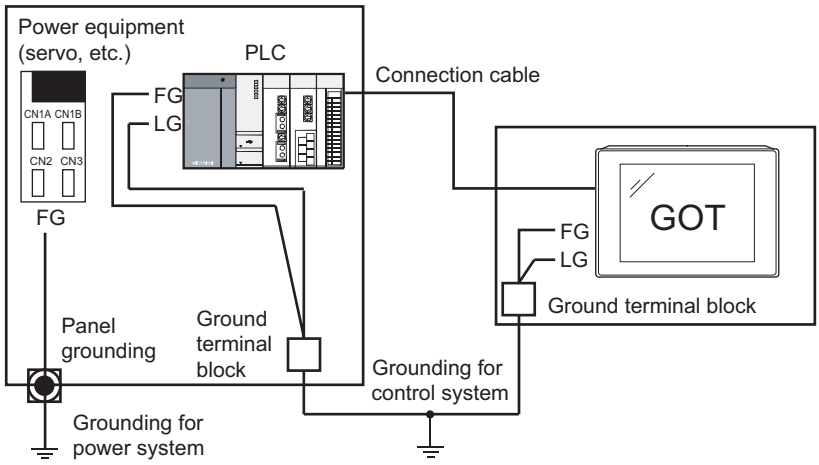
(1) Independent ground ..... Best condition

(2) Shared grounding ..... Good condition

(3) Common grounding ..... Not allowed

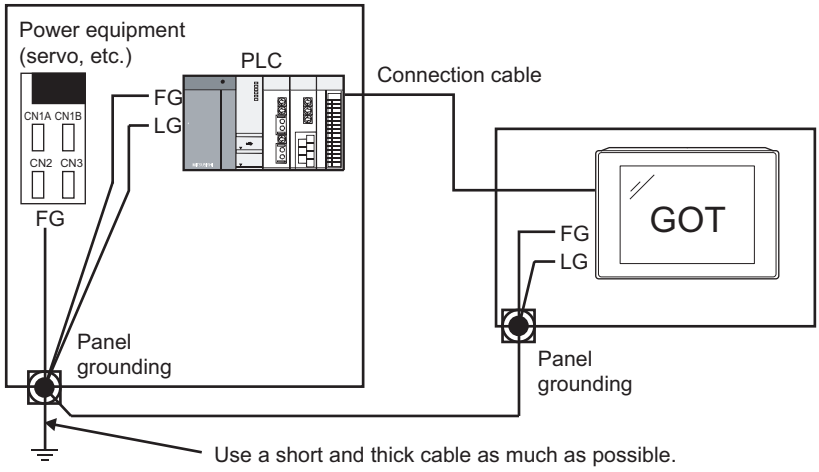
- Use the cable of 2mm^2 or more for grounding.
  Set the grounding point closer to the GOT to make the grounding cable short as possible.

1 Example of independent grounding



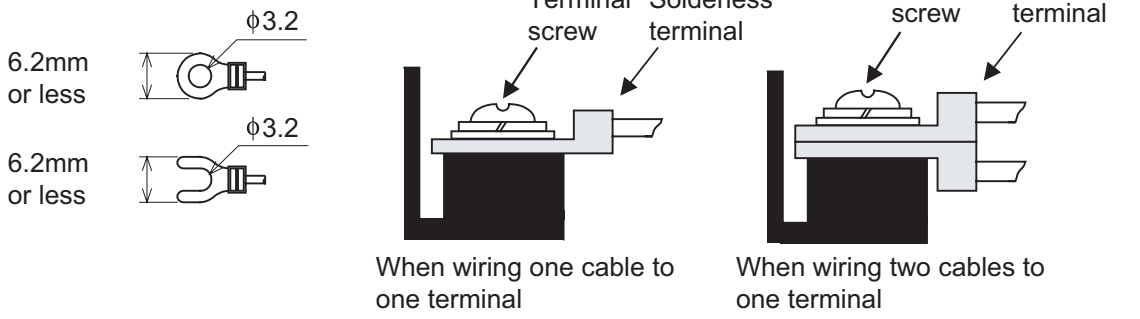
* Ground the control system, especially modules communicating each other, to one end.

2 Example of shared grounding



* Ground the system to one end.

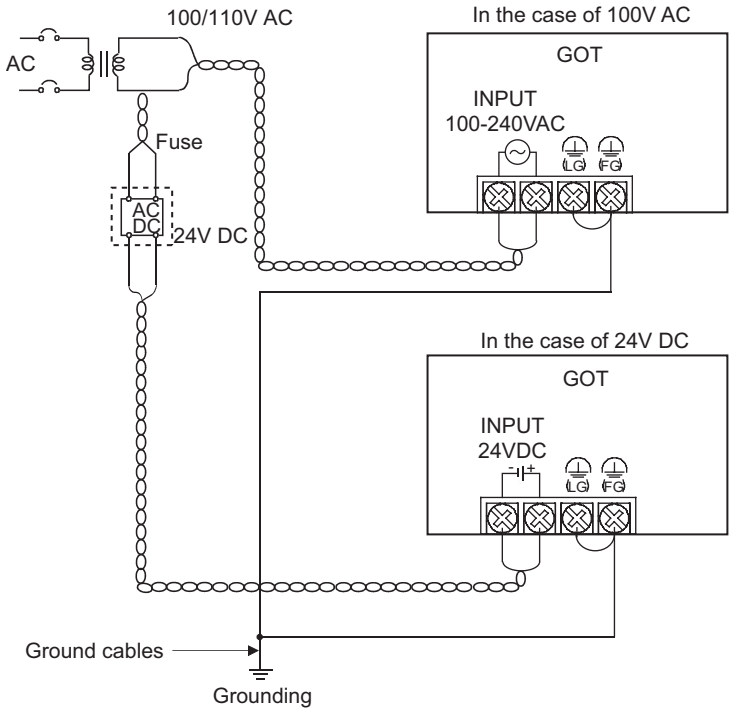
Recommended terminal shape



Applicable solderless terminal	RAV1.25- 3, V2- S3.3, V2- N3A, FV2- N3A

7.4 Power Supply Connection

This section provides an example for connecting power cables and ground cables to the power terminals situated on the back of the GOT.



Point

Precautions for wiring to the power supply section

1. For 100V AC, 200V AC or 24V DC cable, use the thickest cable as possible (Max. 2mm^2) and start twisting them at the position closest to the connected terminals. To prevent a short circuit due to loose screws, use the solderless terminal with insulation sleeve.
2. When connection is made between LG and FG terminals, be sure to connect them to the ground.
   Otherwise, the system becomes susceptible to noise.
   Since the LG terminal has potential equal to a half of the input voltage, touching the terminal may lead to an electric shock.

8. OPTION

8.1 CF Card

The CF card is used to transfer the OS or project data and to save data of the alarm history function or other functions.
Refer to the following for details

☞ 13. FILE DISPLAY AND COPY (PROGRAM/DATA CONTROL)

8.1.1 Applicable CF card

The following CF cards are applicable for GT15□□.

Mode	Description
GT05-MEM-16MC	Flash ROM 16MB
GT05-MEM-32MC	Flash ROM 32MB
GT05-MEM-64MC	Flash ROM 64MB
GT05-MEM-128MC	Flash ROM 128MB
GT05-MEM-256MC	Flash ROM 256MB
—	Commercially-available CF card *1

*1: Some models with the operations checked by our company are usable.
For the operation-checked models, refer to "List of valid devices applicable for GOT1000 series" (T10-0039) separately available.
The Technical News above is available as a reference at the information site for Mitsubishi industrial automation products MELFANSweb home page.
(MELFANSweb home page: http:// wwwf2.mitsubishielectric.co.jp/melfansweb/english/index_e.htm)

Point

The flash PC card of the GOT-A900 series

In the GT15□□, the flash PC card for GOT-A900 series cannot be used.

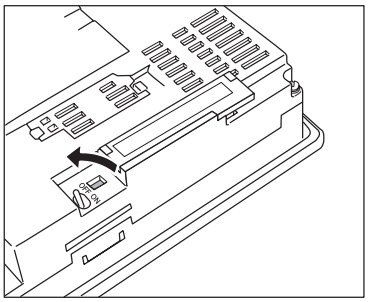
Use the CF card which is described in the above.

8.1.2 Installing and removing procedures of the CF card

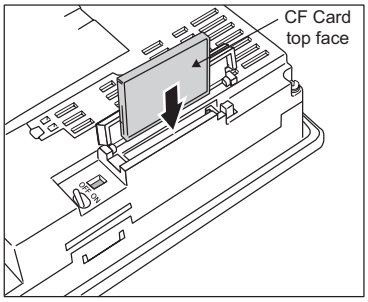
Install/remove the CF card with the power supply of GOT is OFF or CF card access switch is "OFF".

1 Installing

1 Turn the CF card access switch of the GOT off.



2 Open the cover of the CF card interface.
Insert and install the CF card into the CF card interface with its front side outside.

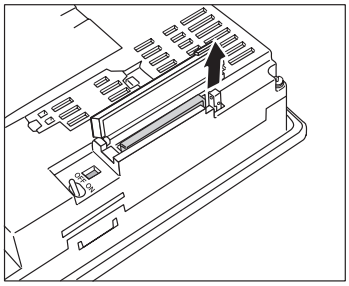


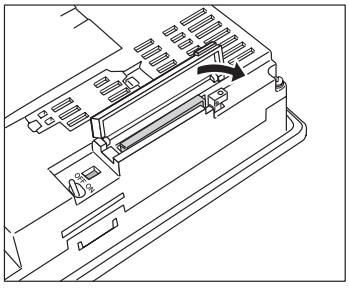
Point

CF card eject button

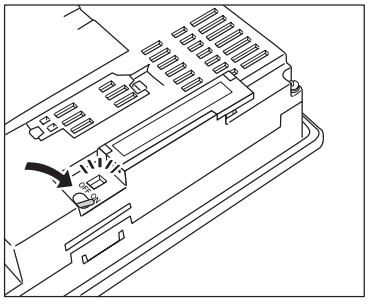
For the following GOTs, after installing the CF card, turn the CF card eject button to 90 degree while being pulled.

- GT1585-S, GT1575-S: Hardware version B (April, 2005) or earlier
- GT1575-V, GT1565-V: Hardware version D (April, 2005) or earlier



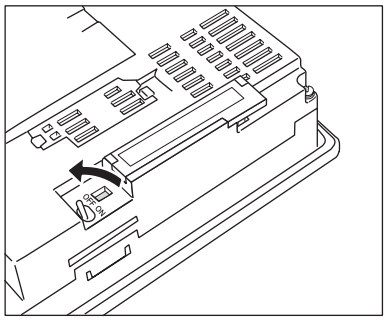


3 Close the cover of the CF card interface. Set the CF card access switch to "ON".



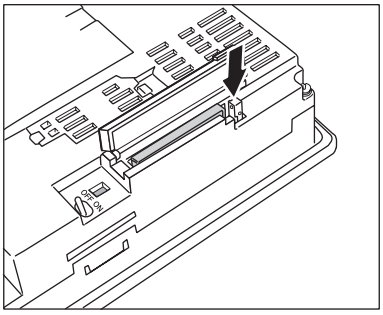
2 Removing

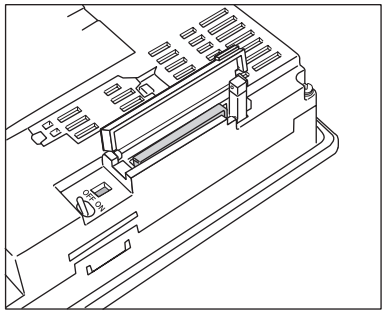
1 Set the CF card access switch of the GOT to "OFF", and make sure that the CF card access LED turns off. (When the CF card access LED turns off, the CF card can be removed even during the GOT power on.)



2 Open the cover of the CF card interface.

Push the CF card eject button of the GOT.
(The CF card eject button is pulled out after pushing at once.)



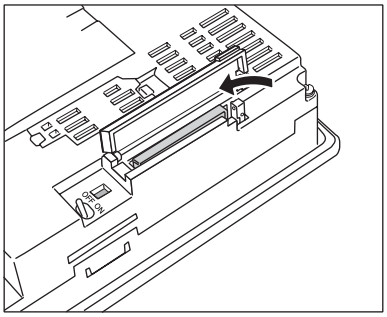


Point

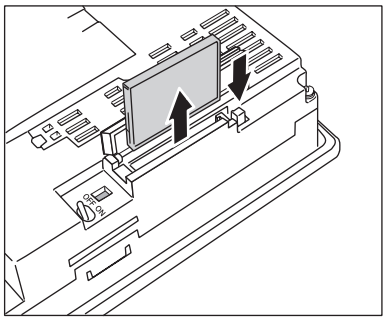
CF card eject button

For the following GOTs, after opening the cover of the CF card interface, raise the CF card eject button.

- GT1585-S, GT1575-S: Hardware version B (April, 2005) or earlier
- GT1575-V, GT1565-V: Hardware version D (April, 2005) or earlier



3 Push the CF card eject button of the GOT to lift the CF card and remove it.



Point

Precautions for removing the CF card

1. While the CF card access LED is on, do not install/remove the CF card or power off the GOT.
   To do so may cause data corruption or malfunction.
2. When ejecting the CF card, support it by hand since it may pop out.
   Failure to do so may cause a fall of the CF card leading to failure or damage of the card.
3. Do not install/remove the CF card while downloading the monitor data or other data by the RS-232 transmission.
   To do so may cause a faulty communication of the GT Designer2 and the data cannot be downloaded normally.

8.2 Memory Card Adaptor

The memory card adaptor is used to convert the CF card into the memory card (Type II).
The memory card (Type II) is used to transmit the OS, project data and to save the data of alarm history function or other functions by installing it to the PC which is equipped with the CMCIA interface.
Refer to the following for the details related to CF card.

☞ 8.1 CF Card

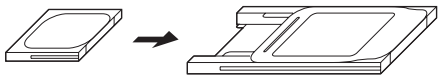
8.2.1 Applicable memory card adaptor

The following memory card adaptor is applicable for GT15□□.

Mode	Description
GT05-MEM-ADPC	Converts the CF card into a memory card

8.2.2 Installing procedure of the CF card into a memory card adaptor

Fit the memory card in the memory card adaptor.



CF card

Memory card adaptor

8.3 Option Function Board

The optional function board is used to extend the option function and the built-in flash memory.
Refer to the following for the functions requiring the optional function board.

☞ GT Designer2 Version□ Screen Design Manual

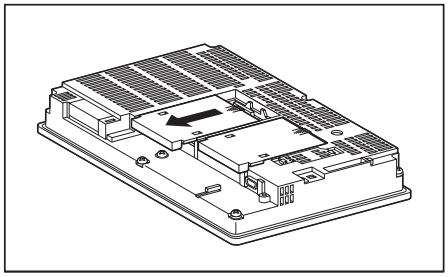
8.3.1 Applicable option function board

The following option function boards are applicable for GT15□□.

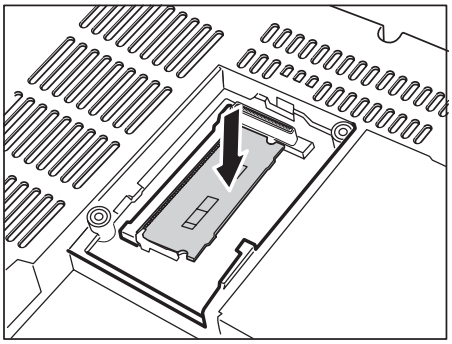
Model	Description
GT15-FNB	Option function board Applicable for MELSEC-A/FX ladder monitor function
GT15-QFNB	Option function board Applicable for MELSEC-Q/QnA/A/FX ladder monitor function
GT15-QFNB16M	Option function board with add-on memory (Option function + 16MB) Applicable for MELSEC-Q/QnA/A/FX ladder monitor function
GT15-QFNB32M	Option function board with add-on memory (Option function + 32MB) Applicable for MELSEC-Q/QnA/A/FX ladder monitor function
GT15-QFNB48M	Option function board with add-on memory (Option function + 48MB) Applicable for MELSEC-Q/QnA/A/FX ladder monitor function

8.3.2 Installing procedure of the option function board

1. Power OFF the GOT.
2. Detach the expansion unit cover (I/F-1 side) of GOT rear face.



3. Install the optional function board in the option function board interface.
   (When the expansion unit is installed in GOT, detach the installed extension unit. And, do not touch the board in the GOT when install the optional function board.)



4. After the installation of option function board, attach the expansion unit cover.
   For installation of expansion unit, install the expansion unit.

8.4 Multi-Color Display Board

The multi-color display board is used for corresponding to 65536-color display.

8.4.1 Applicable multi-color display board

The following multi-color display board is applicable for GT15□□.

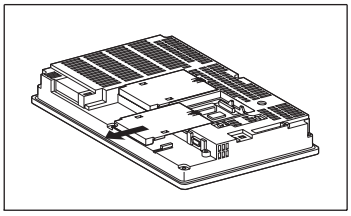
Model	Description
GT15-XHNB	Multi-color display board for XGA (For 65536-color display)
GT15-VHNB	Multi-color display board for SVGA/VGA (For 65536-color display)

Point When using GT1575-VN, GT1572-VN, GT1562-VN

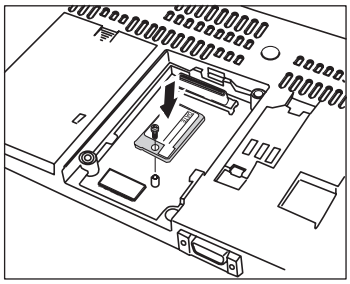
For GT1575-VN, GT1572-VN and GT1562-VN, 65536 color display is not supported even with the multi-color display board installed.

8.4.2 Installing procedure of the multi-color display board

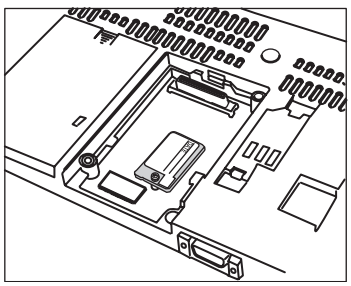
1. Power OFF the GOT.
2. Remove the expansion unit cover (I/F-2 side) of GOT rear face.



3. Install the multi-color display board in the multi-color display board interface.
(When the extension unit is installed in GOT, remove the installed extension unit. And, do not touch the board in the GOT when install the multi-color display board.)



4. After the installation, tighten a fixing screw within the specified torque range (0.25 to 0.35N·m).



8.5 Communication Unit

The communication unit is used to relate the GOT expansion unit interfaces to the system at the connection destination.
Refer to the following for the details of connection statuses.

☞GOT1000 Series Connection Manual

8.5.1 Applicable communication unit

The following communication units are applicable for GT15□□.

Product name	Model	Description	
Bus connection unit	GT15-QBUS	For QCPU (Q mode)/motion controller (Q series) connection (standard model)	For last GOT, 1 connector
	GT15-QBUS2		For intermediary and last GOT, 2 connectors
	GT15-ABUS	For A/QnACPU/motion controller (A series) connection (standard model)	For last GOT, 1 connector
	GT15-ABUS2		For intermediary and last GOT, 2 connectors
	GT15-75QBUSL	For QCPU (Q mode)/motion controller (Q series) connection (slim model)	For last GOT, 1 connector
	GT15-75QBUS2L		For intermediary and last GOT, 2 connectors
	GT15-75ABUSL	For A/QnACPU/motion controller (A series) connection (slim model)	For last GOT, 1 connector
	GT15-75ABUS2L		For intermediary and last GOT, 2 connectors
Serial communication unit	GT15-RS2-9P	For RS-232 interface connection, connector type	
	GT15-RS4-9S	For RS-422 interface connection, connector type	
	GT15-RS4-TE	For RS-422 interface connection, terminal block type	
Ethernet communication unit	GT15-J71E71-100	Ethernet (100Base-TX/10Base-T) unit	
MELSECNET/10 communication unit	GT15-75J71LP23-Z	Optical loop unit (A9GT-QJ71LP23 + GT15-75IF900 set)	
	GT15-75J71BR13-Z	Coaxial bus unit (A9GT-QJ71BR13 + GT15-75IF900 set)	
CC-Link communication unit	GT15-75J61BT13-Z	Intelligent device station unit (A8GT-J61BT13 + GT15-75IF900 set)	
Interface converter unit	GT15-75IF900	Conversion unit for GOT-A900/GOT800 series communication unit	

8.5.2 Installing procedure

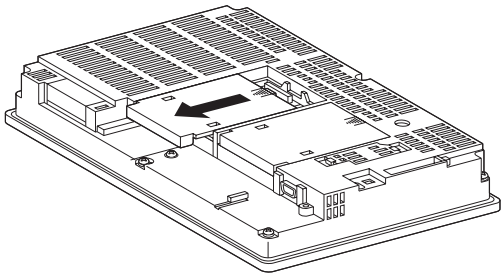
This section describes how to install a communication unit on a GOT.
The communication units can be installed in layers.
When installing communication units in layers, refer to the following item after implementing the steps described in this section.

☞ 8.5.3 Installing multiple communication units in layers

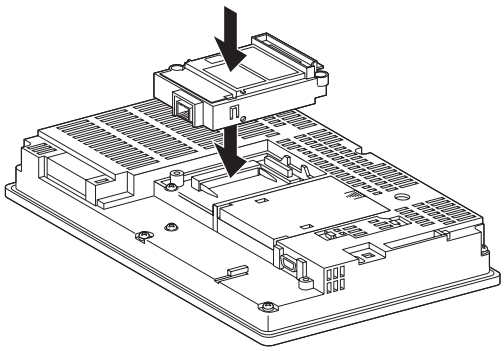
1 Bus connection unit

(1) GT15-QBUS, GT15-ABUS

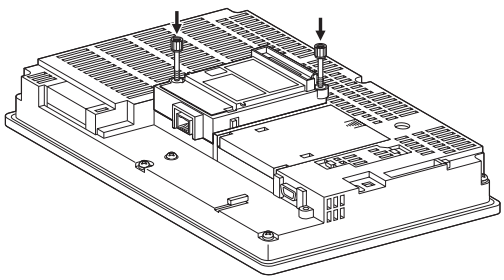
1. Power OFF the GOT.
2. Remove one of the extension unit covers of the GOT.



3. Fit the communication unit along the groove of the GOT case.



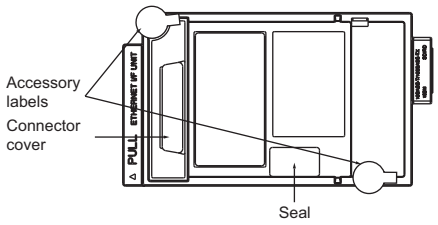
4. Fasten the communication unit by tightening its mounting screws (2 places) with tightening torque of 0.36 to 0.48 N·m



5 When installing a communication unit on the outer layer, refer to the following.

8.5.3 Installing multiple communication units in layers

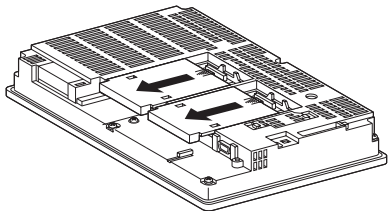
When not installing a communication unit on the outer layer, cover the top of mounitng screws (2 places) with accessory lavels in order to avoid receiving static electricity.
Keep the connector cover fixed. Keep the seal stuck as it is.



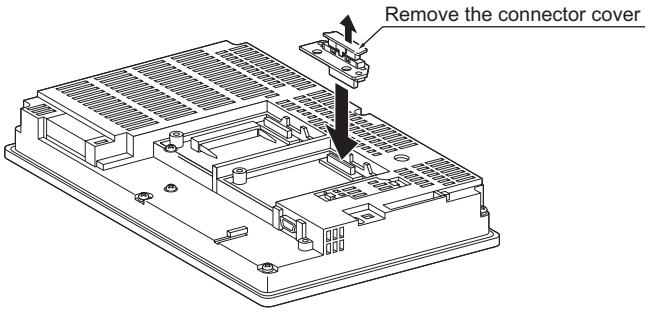
(2) GT15-QBUS2, GT15-ABUS2

1 Power OFF the GOT.

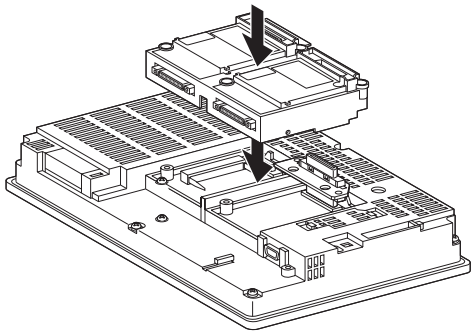
2 Remove the expansion unit covers (I/F-1 side and I/F-2 side) of the GOT rear face.



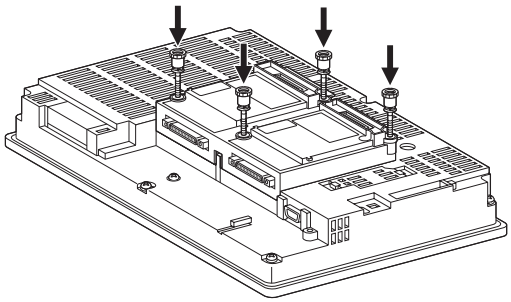
3 Install the extend interface relay board on the Extend I/F-2 side of the GOT.
After the installation, detach the connector cover from the extend interface relay board.



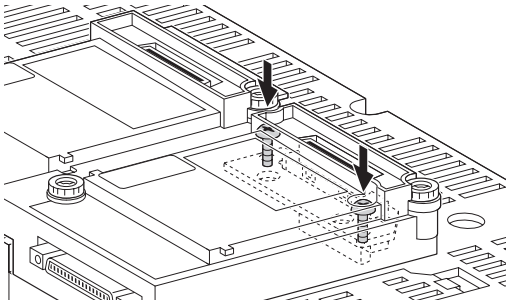
4 Install the communication unit in the expansion unit interface of the GOT rear face.
(When the extension unit is installed in GOT, remove the installed extension unit. And, do not touch the board in the GOT when install the communication unit.)



5 After the installation, tighten the mounting screws (4 places) in the specified torque range (0.36 to 0.48N·m).



6 Tighten the extend interface relay board installed by the step 3 within the specified torque range (0.36 to 0.48N·m). (2 places)



Point

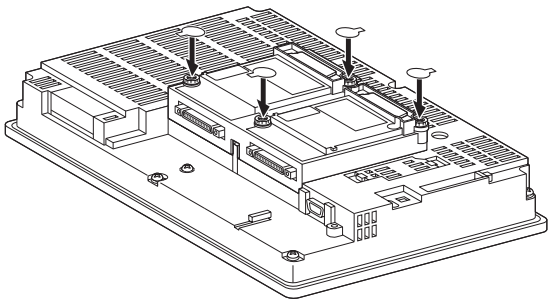
Removing the GT15-QBUS2, GT15-ABUS2

Before removing the unit, unscrew the extend interface relay board fixing screws.
(☞ above 6)

7 When installing a communication unit on the outer layer, refer to the following.

☞ 8.5.3 Installing multiple communication units in layers

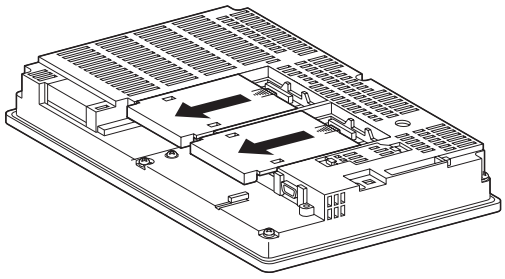
When not installing a communication unit on the outer layer, cover the top of mounting screws (4 places) with accessory labels in order to avoid receiving static electricity.
Keep the connector cover fixed.
Keep the seal stuck as it is.



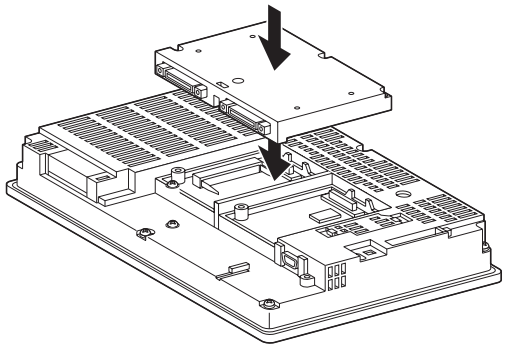
(3) GT15-75QBUSL, GT15-75QBUS2L, GT15-75ABUSL, GT15-75ABUS2L

1 Power OFF the GOT.

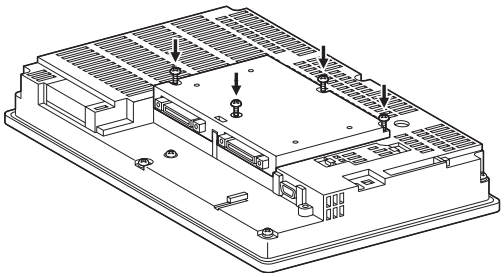
2 Remove the expansion unit covers (I/F-1 side and I/F-2 side) of the GOT rear face.



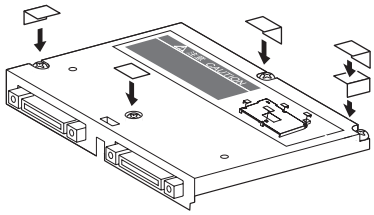
3 Install the communication unit in the expansion unit interface of the GOT rear face.
(When the extension unit is installed in GOT, remove the installed extension unit. And, do not touch the board in the GOT when install the communication unit.)



4 After the installation, tighten the mounting screws (4 places) in the specified torque range (0.42 to 0.57N·m).



5 Paste the provided seals after tightening the mounting screws.



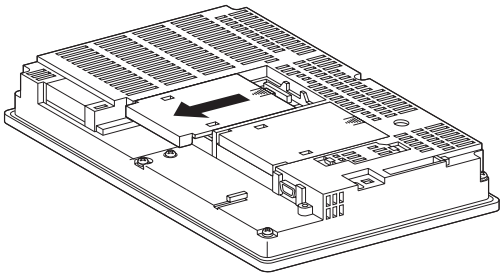
2 Serial communication unit, Ethernet communication unit

The following explanation uses the Ethernet communication units as an example.
The serial communication unit can be installed with the same procedure.

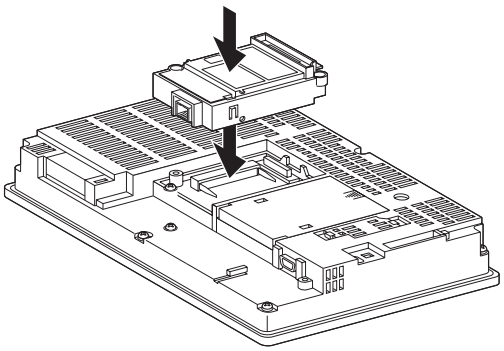
(1) Unit installation

1 Power OFF the GOT.

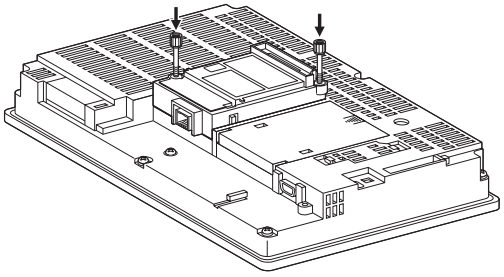
2 Remove one of the extension unit covers of the GOT.



3 Fit the communication unit along the groove of the GOT case.



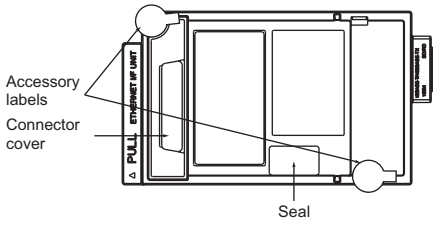
4 Fasten the communication unit by tightening its mounting screws (2 places) with tightening torque 0.36 to 0.48 N·m.



5 When installing a communication unit on the outer layer, refer to the following.

☞ 8.5.3 Installing multiple communication units in layers

When not installing a communication unit on the outer layer, cover the top of mounting screws (4 places) with accessory labels in order to avoid receiving static electricity.
Keep the connector cover fixed.
Keep the seal stuck as it is.



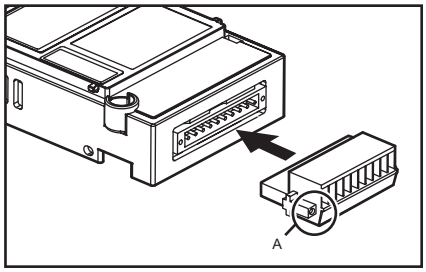
Point

Remove the serial communication unit, ethernet communication unit

If you remove the serial communication unit or ethernet communication unit, detach it from specified direction (shown PULL) so as not to break a connector.

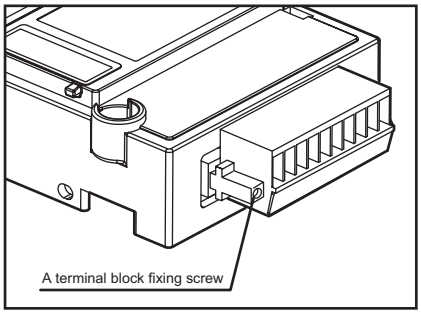
(2) Terminal block socket installation (For GT15-RS4-TE only)

1 Insert the terminal block socket in the serial communication unit.



2 Fasten the terminal block by tightening the terminal block fixing screws (2 places) with the tightening torque of 0.20 to 0.25 N·m.

(Extended figure of part A)



Point

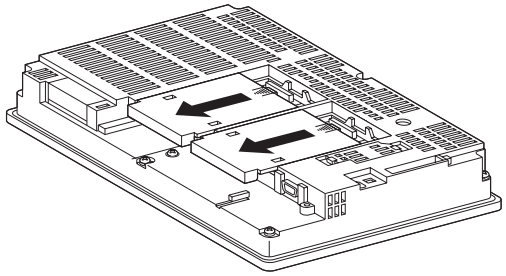
When attaching or removing a communication cable

When attaching or removing a communication cable to/from the terminal block socket, detach the terminal block socket from the connector.
(When communication units are installed in multiple layers, the units do not have to be removed from the GOT main unit.)

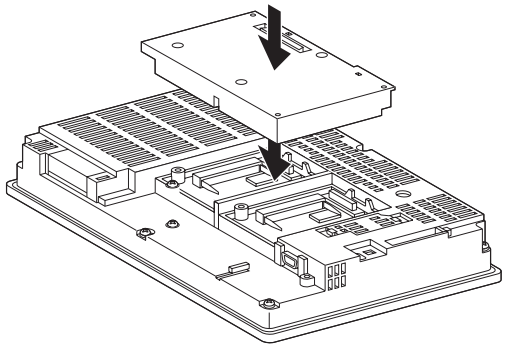
3 MELSECNET/10 communication unit, CC-Link communication unit

1 Power off the GOT.

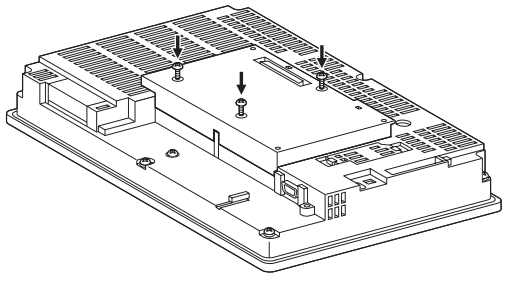
2 Remove the two extension unit covers of the GOT.



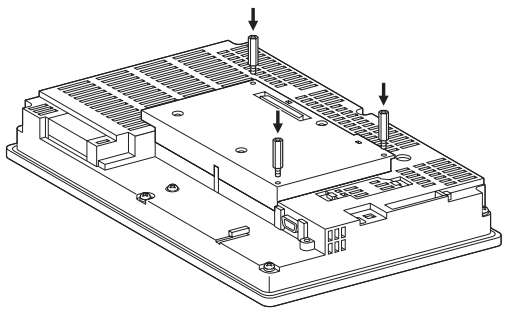
3 Fit the GT15-75IF900 along the groove of the GOT case.



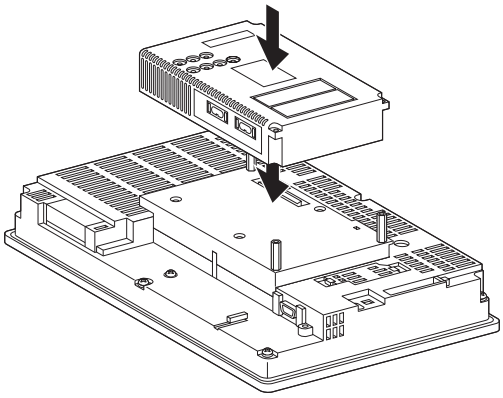
4 Fasten the GT15-75IF900 by tightening its mounting screws (3 places) with tightening torque 0.36 to 0.48 N·m.



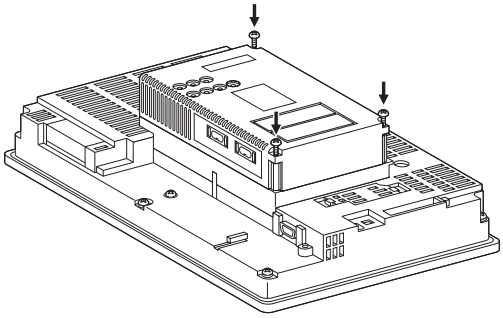
5 Attach the communication unit fixing brackets (3 places) to GT15-75IF900, then fasten them with tightening torque of 0.36 to 0.48 N·m.



6 Mount the network unit (A9GT-QJ71LP23 or A9GT-QJ71BR13) or CC-Link communication unit (A8GT-J61BT13) to GT15-75IF900.



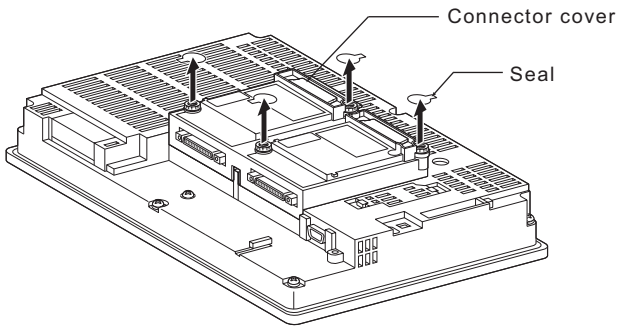
7 Fasten the unit fixing brackets (3 places) with tightening torque of 0.36 to 0.48N·m.



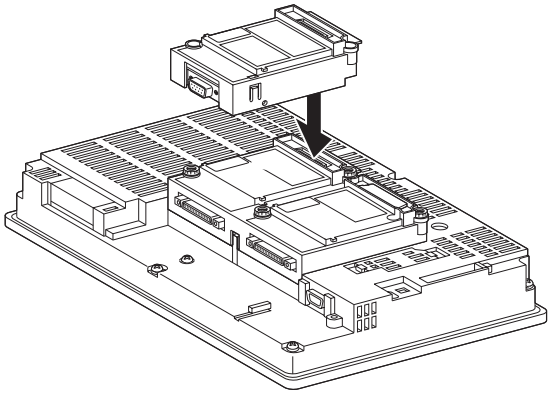
8.5.3 Installing multiple communication units in layers

This section describes how to install another communication unit on the communication unit that has been installed on the GOT.
When no communication unit is installed on the GOT, apply the steps in this section after installing a communication unit. (☞ 8.5.2 Installing procedure)

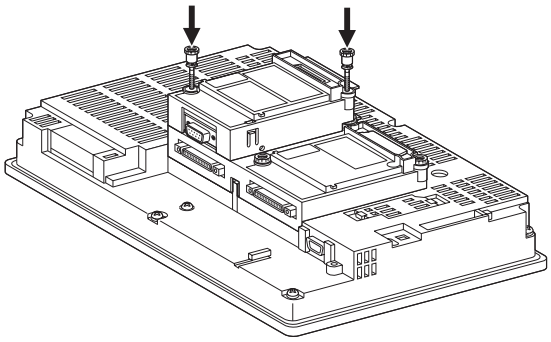
1 Remove the connector cover and seal from the installed communication unit.



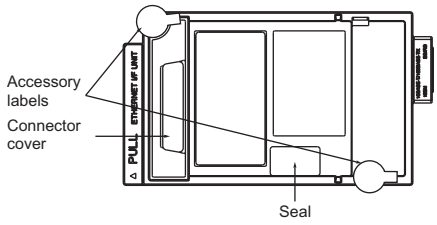
2 Install the unit on outside of the unit that has been installed.



3 After installing the unit, fasten it by tightening the mounting screws (2 places) with tightening torque of 0.36 to 0.48N·m.



4 When installing another communication unit on the outer layer, implement the above operations of 1 to 3.
When not installing a communication unit on the outer layer, cover the top of mounting screws with accessory labels in order to avoid receiving static electricity.
Keep the connector cover fixed.
Keep the seal stuck as it is.



Point

(1) Installation position for a communication unit that occupies two Extend I/Fs
For communication units that occupy two Extend I/Fs as shown below, install them directly on the GOT main unit.
They cannot be installed on outside of other communication units.

- Bus connection unit (GT15-QBUS2, GT15-ABUS2, GT15-75QBUS2L, GT15-75ABUS2L only) (☞ 8.5.3 1 Bus connection unit)
- MELSECNET/10 communication unit (☞ 8.5.3 3 MELSECNET/10 communication unit, CC-Link communication unit)
- CC-Link communication unit (☞ 8.5.3 3 MELSECNET/10 communication unit, CC-Link communication unit)

(2) Removing the GT15-QBUS2, GT15-ABUS2
Before removing the unit, unscrew the extend interface relay board fixing screws.
(☞ 8.5.2 1 (2)GT15-QBUS2, GT15-ABUS2)

8.6 RS-422 Conversion Unit

The RS-422 conversion unit is inserted to the GOT RS-232 connector to enable the RS-422 communication by RS-232/RS-422 conversion.
Refer to the following for the details of connection statuses.

☞ GOT1000 Series Connection Manual

8.6.1 Applicable RS-422 conversion unit

The following RS-422 conversion units are applicable for GT15□□.

Model	Description	
GT15-RS2T4-9P	RS-422 conversion unit	RS-422 side connector 9 pins
GT15-RS2T4-25P		RS-422 side connector 25 pins

Point

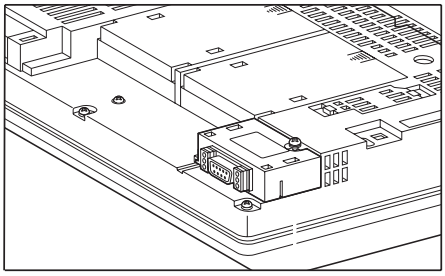
Notes on using the RS-422 conversion unit

1. Use GT15-RS2T4-25P when you switched to use from the GOT-A900 series. Use GT15-RS2T4-9P when you newly use the GOT1000 series.

2. Set to [ON] by [5V supply] at [Communication settings] of the utility.
   (☞ 10.1.4 Communication setting display operation)

8.6.2 Installing procedure

1. Power OFF the GOT.
2. Installs the RS-422 conversion unit in the RS-232 interface of the GOT rear face.
3. Tighten the fixing screws in the specified torque range (0.36 to 0.48N·m) after the installation.



8.7 Battery

Battery is used to backup data when the power supply of GOT is OFF.
The data which can be backed-up with the battery is shown below.

- Present time (Clock data) (☞ 12.1 Time Setting and Display)
- Maintenance time notification data (☞ 16.1 Maintenance Timing Setting)

8.7.1 Applicable battery

The following battery is applicable for GT15□□.

Model	Description
GT15-BAT	Battery for backup of clock data and maintenance timing setting data.

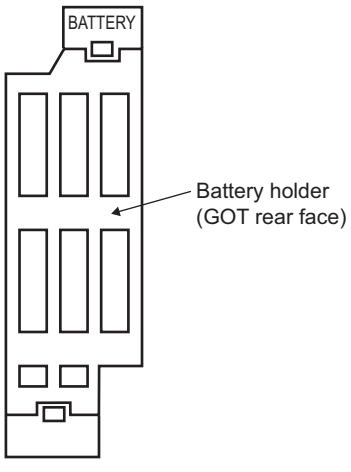
8.7.2 Battery specifications

Item	Specifications
Type	Magnesium manganese dioxide lithium primary battery
Initial voltage	3.0V
Nominal current	1800mAh
Storage life	Approx.5 years (Operating ambient temperature of 25°C)
Total power stoppage time	Refer to Section 8.7.4 Battery life
Lithium content	0.49g
Application	For backup of clock data and maintenance timing setting data.

8.7.3 Battery replacement procedure

Replace battery periodically by referring to Section 8.7.4 Battery life.

1. Keep the GOT power supply on for 10 minutes or more, and turn it off. (Executes step 2 to 6 within 5 minutes of powering the GOT power supply off.)
2. Remove the battery holder form the GOT backside.
3. Remove the old battery from the holder and disconnect the connector.
4. Connect the new battery to the connector.
5. Insert the battery into the holder and set it into the GOT backside.
6. Turn the GOT power supply on.
7. Check if the battery condition is normal within the utility.
   Refer to the following for the details of battery status display.



☞ 12. CLOCK SETTINGS AND BATTERY STATUS DISPLAY (TIME SETTING AND DISPLAY)

Point

1. Precautions after battery replacement

   Make sure to turn on the GOT power supply once upon completion of battery replacement.
   Failure to do so may decrease the battery life.

2. When the bus connection unit (GT15-QBUS2/GT15-ABUS2/GT15-75ABUSL/GT15-75ABUS2L) is connected to GT156□.

   Before installing or replacing the battery, disconnect the bus connection cable. (When connecting or disconnecting the bus connection cable, be sure to power off the GOT and PLC.)

8.7.4 Battery life

Life span of the battery set in the GOT is shown below.

Battery life		
Operating ambient temperature of 0 to 45°C	Operating ambient temperature of 45 to 55°C	Data backup time after detection of battery voltage low*
5 years	3 years	14 days

*: In the following conditions, the data backup time is 5 minutes after the power supply is turned off.
- The battery connector is disconnected.
- The battery lead is disconnected.

Point

Battery life and replacement time

1. Battery life reference: Approx.5 years in actual use (Operating ambient temperature of 25°C)
   Battery replacement time reference: 4 to 5 years
   Calculate the natural discharge amount of the battery, as necessary.

2. Check if the battery condition is normal within the utility.
   Refer to the following for the details of battery status display.
   ☞12. CLOCK SETTINGS AND BATTERY STATUS DISPLAY (TIME SETTING AND DISPLAY)

8.8 Protective Sheet

The protection sheet is used to protect the operation surface from damage or dirt when the touch key of GOT display section is operated.

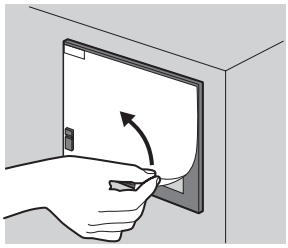
8.8.1 Applicable protective sheet

The following protective sheets are applicable for GT15□□.

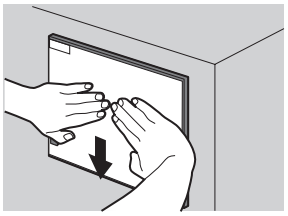
Product name	Model	Description	
Protective sheet	GT15-90PSCB	15" protective sheet	Clear 5 sheets
	GT15-90PSGB		Antiglare 5 sheets
	GT15-90PSCW		Clear (Frame: White) 5 sheets
	GT15-90PSGW		Antiglare (Frame: White) 5 sheets
	GT15-80PSCB	Protection sheet for 12.1"	Clear 5 sheets
	GT15-80PSGB		Antiglare 5 sheets
	GT15-80PSCW		Clear (Frame: White) 5 sheets
	GT15-80PSGW		Antiglare (Frame: White) 5 sheets
	GT15-70PSCB	Protection sheet for 10.4"	Clear 5 sheets
	GT15-70PSGB		Antiglare 5 sheets
	GT15-70PSCW		Clear (Frame: White) 5 sheets
	GT15-70PSGW		Antiglare (Frame: White) 5 sheets
	GT15-60PSCB	Protection sheet for 8.4"	Clear 5 sheets
	GT15-60PSGB		Antiglare 5 sheets
	GT15-60PSCW		Clear (Frame: White) 5 sheets
	GT15-60PSGW		Antiglare (Frame: White) 5 sheets

8.8.2 Installing procedure

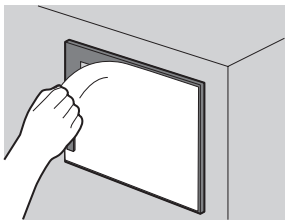
1 Remove the old protective sheet from the GOT, and clean the GOT surface.



2 Peel the release paper from the back of the new protective sheet, and attach its adhesive side to the GOT display section.
When attaching the protective sheet, make sure to fit it on the display section closely without leaving any clearance between them.



3 Peel the protective film off the protective sheet.



Remark Replacement time of protective sheet

Check the status of the protection sheet visually by to the daily inspection. The visibility becomes worse when there is too much dirt and cracks, causing malfunction. Proceeds replacement promptly.

8.9 USB Environmental Protection Cover

The USB environment cover protects the USB connector on the front face of GOT from dust, water, and oil.
The GOT is installed with the USB environment cover at factory shipment.
Replace when damage and deterioration are caused.

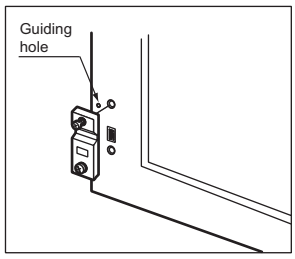
8.9.1 Applicable USB environmental protecton cover

The following USB environmental protection cover is applicable for GT15□□.

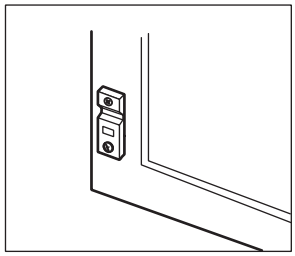
Model	Description
GT15-UCOV	Environmental protection cover for main body front side USB interface (IP67 compliant)

8.9.2 Installing procedure

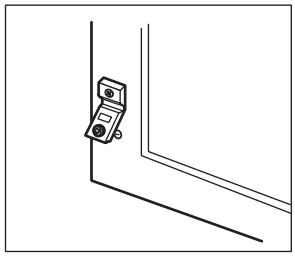
1. Fix the USB environmental protection cover to the GOT by tightening its upper fixing screw within the specified torque range (0.36 to 0.48 N·m). (It is advisable to set the USB environmental protection cover along a guiding hole which is provided in the GOT, as it will make the installation easier.)



2. When the USB interface is not used, also tighten the lower fixing screw of the USB environmental protection cover within the specified torque range (0.36 to 0.48 N·m). (IP67 compliant)



3. When the USB interface is used, remove the lower fixing screw of the USB environmental protection cover, and connect the USB cable. (IP67 incompliant)



Point

Precautions when the USB environment cover is opened

Environmental protective structure of USB interface is "IP2X" when the USB environmental cover is opened.

8.10 Stand

Stand is used to fix the GOT to standing status in order to debug the monitor screen data easily.

8.10.1 Applicable stand

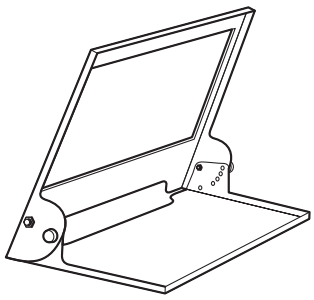
The following stand is applicable for GT15□□.

Product name	Model	Description
Stand	GT15-90STAND	Stand for 15"
	GT15-80STAND	Stand for 12.1"
	GT15-70STAND	Stand for 8.4"/10.4"

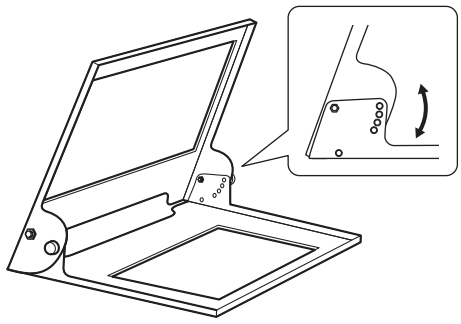
8.10.2 Installing procedure

1. Set the stand so that the front side of the GOT to be mounted faces the front.
   For GT15-70STAND, the surface to be used to set the GOT changes according to the GOT mounted.
2. Adjust the mounting angle of GOT with the angle adjusting screw of the stand.
3. Put the GOT into the Stand from the front side and fix it using the fixtures.
   For the GOT mounting method, refer to the following.

☞ 6.5 Installation Procedure



For GT15-90 STAND,GT15-80 STAND



For GT15-70 STAND

8.11 Attachment

The attachment is used to replace A960GOT, AC97□GOT to GT156□ (8.4").
If use attachment when replace A960GOT or AC97□GOT to GT156□, there is no need of additional processing as mounting hole of the inside control panel etc. which is used for A960GOT, A97□GOT.

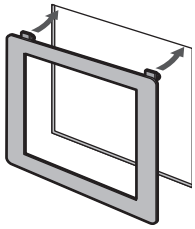
8.11.1 Applicable attachment

The following attachments are applicable for GT156□.

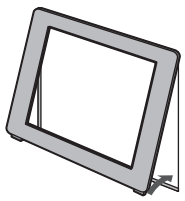
Model	Description	
GT15-60ATT-96	Attachment for 8.4"	A960GOT→GT156□
GT15-70ATT-97		A97□GOT→GT156□

8.11.2 Installing procedure

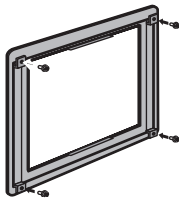
1. Hang the two upper hooks on the upper part over the mounting holes in the control panel.



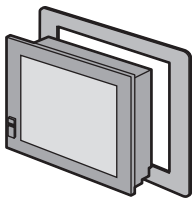
2. While lifting the attachment upward, hang the two lower hooks on the lower part of the control panel.



3. Fix the attachment to the control panel with four clamp screws in the torque range of 0.82 to 1.10N·m.



4. Place the GOT into the attachment from the front, and fix it by tightening the mounting screws included with the GOT in the torque range of 0.36 to 0.48N·m.



Point

Precautions when the attachment is installed

- The attachment can be used when the mounting panel thickness is 1.2 to 3mm. If the installation panel thickness exceeds 3mm, the GOT cannot be replaced by using the attachment.
- Replacing GOT with the attachment does not compliant with the standard IP65, IP67, NEMA4 of the waterproof and dustproof.

9. UTILITY FUNCTION

Utility is a function, which carries out connection of GOT and controller, screen display and operation method settings, program/data control and self-check etc.

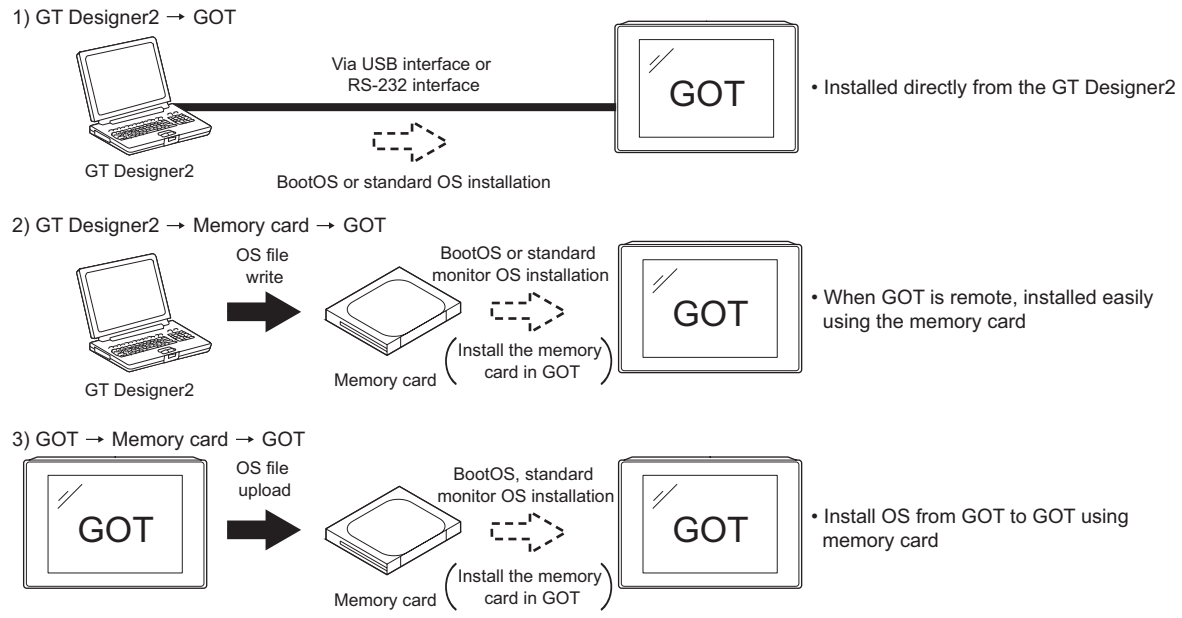
Refer to the following for the utility function list.

☞ 9.3 Utility Display

9.1 Utility Execution

For utility execution, utility has to be displayed by installing BootOS and standard monitor OS in the C drive (built in flash memory).

There are following three types for the installing BootOS and standard monitor OS methods.



Refer to the following for the installation which uses GT Designer2.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual

Refer to the following for the installation which uses GOT.

☞ 18. INSTALLATION OF COREOS, BOOTOS AND STANDARD MONITOR OS

9.2 Utility Function List

The items in the following list can be set/operated on the utility screens.

Item			Functions overview
Communication setting *1			Setting of channel number for the communication interface and assignment of communication driver
	Detail settings		Setting of communication parameter
			Sequence program protection key word setting (When FX series PLC is connected)
			Sequence program protection key word deleting (When FX series PLC is connected)
			Sequence program protection status cancel (When FX series PLC is connected)
GOT setup	Display		Setting of opening screen time
			Setting of screen saving time
			Setting of screen saving back light ON/OFF
			Switching message language (Japanese/English)
			Human sensor Effective/Invalid setting
			Sensor detect level setting
			Displaying sensor detect time
			Sensor off delay setting
		Brightness, contrast	Liquid crystal intensity setting
	Operation		Setting of buzzer volume
		Security setting *2	Security level change (security password input of each object)
		Utility call key	Setting of the menu call key
		Key sensitivity	Key sensitivity setting
		Key reaction speed	Key reaction speed setting
		Touch panel adjustment	Touch panel coordinates adjustment
	Q/QnA ladder monitor		Setting of data storage location for the MELSEC-Q/QnA ladder monitoring function
	Transparent mode settings		Channel No. setting for the communication target device in using the FA transparent function
Time setting & display *3			Selection of base clock
			Display current time of clock.
			Set current time of clock.
			Display of battery status

*1: It is necessary to carry out the following items by GT Designer2.
- Installation of communication drivers
- Allocation of channel numbers and communication drivers

*2: It is necessary to set the security level by GT Designer2.
*3: If necessary please install the battery.

Item			Functions overview
Program/data control	OS information		Installing OS
			Uploading OS
			Property display of OS (Kind, version, and date)
			Data check of system file (OS)
	Project Information		Downloading project file
			Uploading project file
			Project file deleting
			Copying project file (A drive → A drive)
			Property display of project file (Date, version and screen title)
			Data check of project file
Program/data control	Alarm information		Deleting alarm log file
			Copying alarm log file
			G1A → CSV conversion (Convert from G1A of the alarm file to CSV)
			G1A → TXT conversion (Convert from G1A of the alarm file to TXT)
		Historical graph display	Displaying historical graph of alarm file
		Tally graph display	Tally graph display of alarm file
	Advanced Recipe information		G1P → CSV conversion (Convert from G1 of the advanced recipe file to CSV)
			G1P → TXT conversion (Convert from G1 of the advanced recipe file to TXT)
			Deleting advanced recipe file or folder
			Copying advanced recipe file
			Moving advanced recipe file or folder
			Changing advanced recipe folder name
			Creating a new advanced recipe folder or file
		Advanced Recipe Record List	Loading record data
			Saving record data
			Matching record data
			Deleting device data
	Logging information		G1L → CSV conversion (Convert from G1L of logging file to CSV)
			G1L → TXT conversion (Convert from G1L of logging file to TXT)
			Deleting logging file or folder
			Copying logging file
			Moving logging file or folder
			Changing logging folder name
			Creating a new logging folder
	Hard copy information		Deleting hard copy file
			Copying hard copy file
	Memory card format		Formatting memory card
	Memory Information		Displaying memory space of GOT
	Special data information		Displaying file/holder name, data size and creation date and time of the file or folder
			Deleting file/holder of the special data
			Checking file of the special data
			Downloading the special data written in the A drive (Standard CF Card) to C drive (built in flash memory)

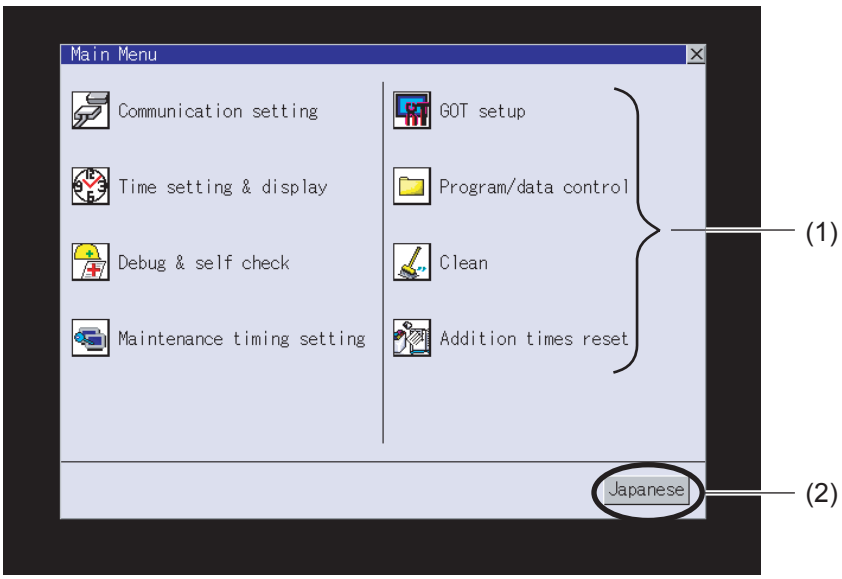
Item			Functions overview
Debug & self check	Debug	System monitor	Monitoring and testing PLC devices, monitoring and changing values in the special module buffer memory
		Ladder monitor	Displaying ladder monitor, executing hard copy
		A List editor	Changing sequence programs or parameters of the ACPU
		FX list editor	Editing FXCPU sequence program in a list
		Intelligent module monitor	Monitoring buffer memory or changing data of an intelligent function module with the dedicated screen, monitoring signal statuses of an I/O module
		Network monitor	Monitoring the network status of the MELSECNET/H, MELSECNET/10, MELSECNET (II) or MELSECNET/B
		Motion monitor	Monitoring the servo of a motion controller CPU (Q series), setting parameters
		Servo amplifier monitor	Executing various monitor functions of servo amplifier, parameter changes, test operations, etc
		CNC monitor	Executing position display monitor, alarm diagnosis monitor, tool offset/param, and program monitor equivalent to the MELDAS dedicated display
	Self check	Memory check	A drive (standard CF card) memory check
			C drive (Built-in Flash Memory) memory check
		Drawing check	Liquid crystal missing bits check, color check, drawing check, display check and overlapping display check
		Font check	Installed fonts check
		Touch panel check	Touch panel operation check
		I/O check	Connecting target check
			Self-loopback check*4
Clean	Clean		Display the screen to clean the display section.
Maintenance timing setting	Maintenance timing setting *5		Black light maintenance timing setting.
			Display section maintenance time notification period setting.
			Setting of touch key maintenance notification count.
			Setting of Built-in flash memory maintenance notification count.
Addition times reset	Addition times reset *5		Function to reset the value of the backlight maintenance notification time, display section maintenance notification time, touch key maintenance notification count, built-in flash memory maintenance notification count which has been additioned for the maintenance report function.

*4: It is necessary to install the RS-232 connector for the test. (☞ 14.7 I/O Check)

*5: It is necessary to install the option function board and the battery.

9.3 Utility Display

To display setting screens fot each utility, the main menu has to be displayed first.



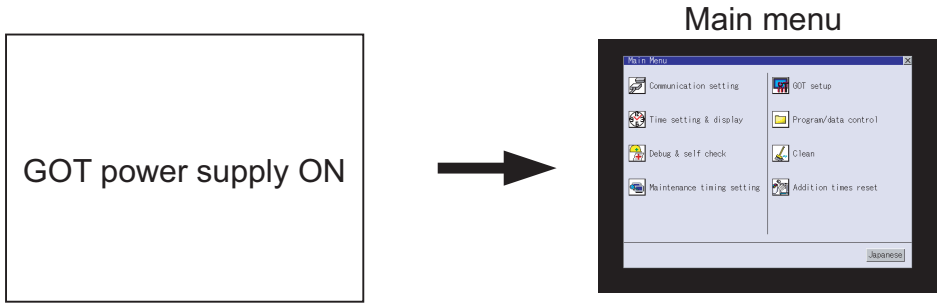
(1) Main menu
The menu items that can be set at the GOT utility are displayed.
Touching a menu item in the main menu will display the setting screen or following selection screen for the item.

(2) System message switch button
This button switches the language used for the utility or system alarms.
For the screens above, touching the button will reboot the GOT and switch the language of the utility to "Japanese". (The button display switches to [English] at the same time.)

9.3.1 Display operation of main menu

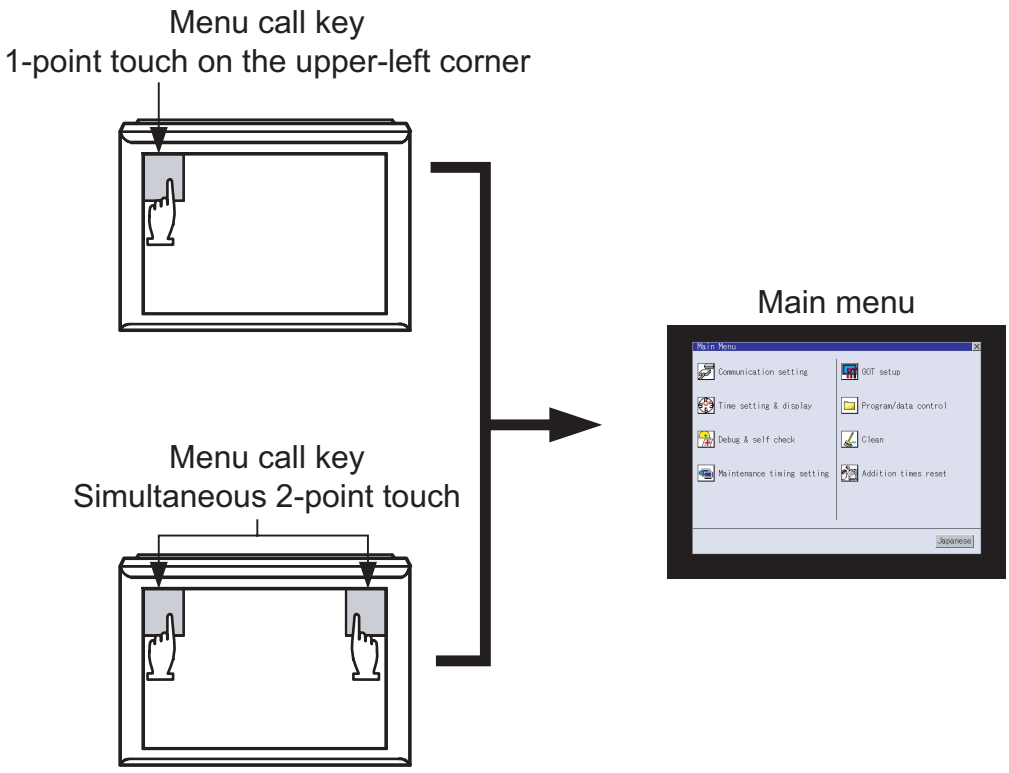
The following three types of operation can display the main menu.
(Display the main menu after installing the basic OS from GT Designer2 to the GOT built in flash memory.)

(1) When project data is undownloaded
If the power supply of GOT turns ON, the main menu is displayed automatically after title display.



(2) When touching menu call key
If you touch the menu call key while user-created screen is displayed, the main menu is displayed.
The menu call key can be set by the GOT utility or GT Designer2.
(The menu call key is set in the position as described below at factory shipment.)

Model name	Default setting at factory shipment
GT1595-X	1-point press on the GOT screen upper left corner
GT1585-S, GT1575-V, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V, GT1562-VN	Simultaneous 2-point presses on the GOT screen upper-right and left corners

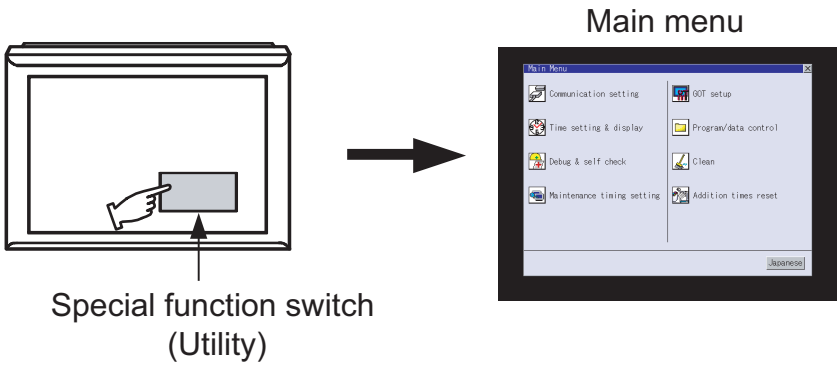


Point

(1) Prohibited simultaneous 2-point presses on the GT1595-X
In the case of using a GT1595-X, do not touch 2 points or more on the GOT screen simultaneously.
Touching 2 points or more simultaneously may activate a part other than the touched point.

(2) When setting menu call key to 1-point
When having set [Pressing time] of the menu call key setting screen to other than "0 (s)", keep pressing the touch panel for the period set to [Pressing time] or more before leaving the finger from the touch panel.
For menu call key setting, refer to the following.
☞ 11.5 Utility call key setting

(3) When touching special function switch (utility)
If you touch the special function switch (utility) while user-created screen is displayed, the main menu is displayed.
The special function switch (utility) can be set as a touch switch that is displayed on a user-created screen by GT Designer2
.



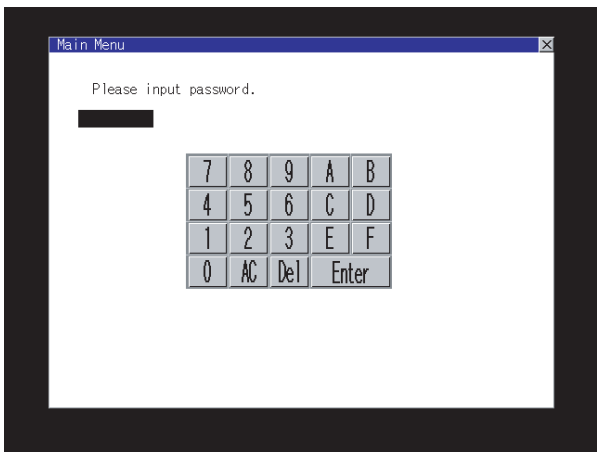
For the details of the special function switch, refer to the following.

☞ GT Designer2 Version☐ Screen Design Manual

Remark

Locking the utility display by password

When you try to display the utility main menu while the password is set to the GOT by GT Designer2, the display for password input will be appeared.
(The password setting of GT Designer2 is in the common menu.)



When the password is not matched, displays the error message.

When touching [OK], the screen returns to the monitor screen.

(1) Input operation of password

1) Input the password after touching 0 to 9, A to F key.

2) Define the password by touching Enter key, after password input.

3) To correct the input character, touch Del key to delete the correcting character and reinput/retype the new character.

(2) Password input cancel operation

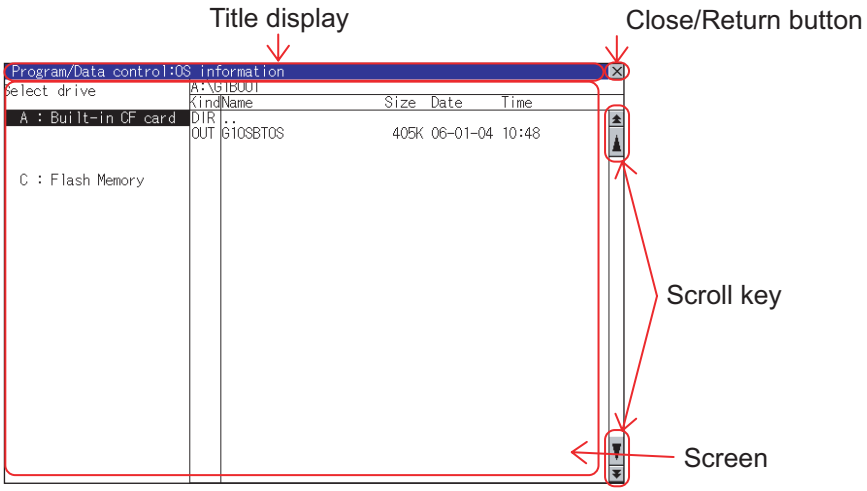
When ☒ button is touched, it returns to the monitor screen.

Refer to the following for the details related to the password setting.

☞ GT Designer2 Version□ Screen Design Manual

9.3.2 Utility basic configuration

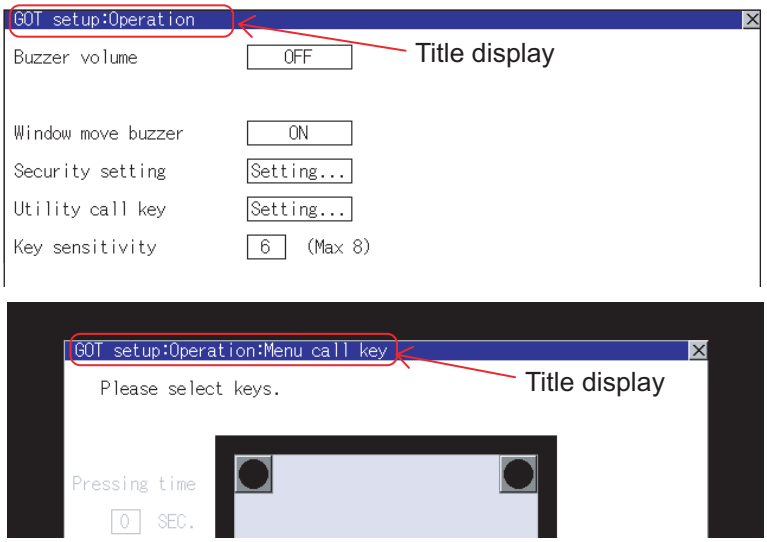
The basic configuration of utility is as follows.



(1) Title display

The screen title name is displayed in title display part.

As the screen is composed of multiple layers, the title including these layers is displayed.



(2) Close/Return button

When a middle screen of the layers is displayed, if the ☒ (Close/return) button in the right corner of screen is touched, returns to the previous screen.

If this button is touched when directly displayed from monitor screen, the screen is closed and returns to monitor screen.

(3) Scroll button

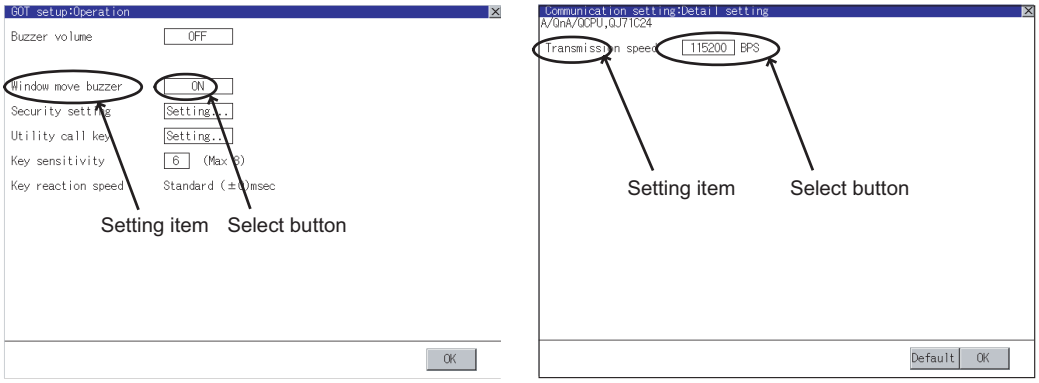
For screens in which the content does not fit on one screen page, there is a right or down scroll button on the screen.

▲ ▼ ◀ ▶ Scroll one line/column

⏫ ⏬ ⏪ ⏩ Scroll window

9.3.3 Basic operation of settings change

1 Change of setting value



1 Touch the select button (setting point) on the screen.
According to the setting item, the button requires selecting setting value, inputting value or displaying other setting screen.

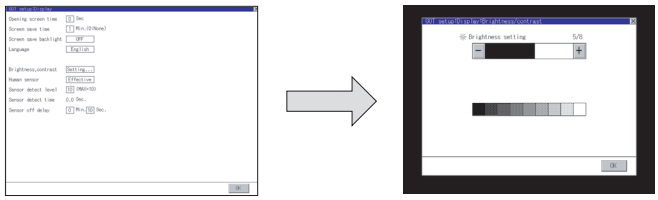
- ON Key: It is a key for selecting the setting value. Repeats with each touch ON ⇄ OFF .
- Numerical Key: It is a key for inputting the numerical value. It displays the keyboard on the bottom of the screen when touched.

In the above mentioned screen example, there is no setting item which displays the keyboard. For the operation of keyboard refer to the next page.

Touching Enter confirms the numerical input.
When the setting range exists it repeats the numerical without displaying keyboard.
Example: 4800bps → 9600bps → 19200bps → 4800bps

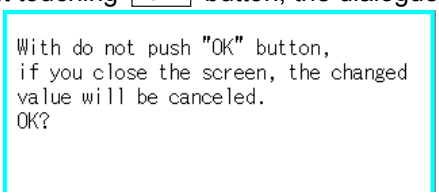
- Setting... Key: It shifts to the setting screen of each setting item when touched.

(Displays the another setting screen.)



2 Setting contents are reflected if OK button is touched.

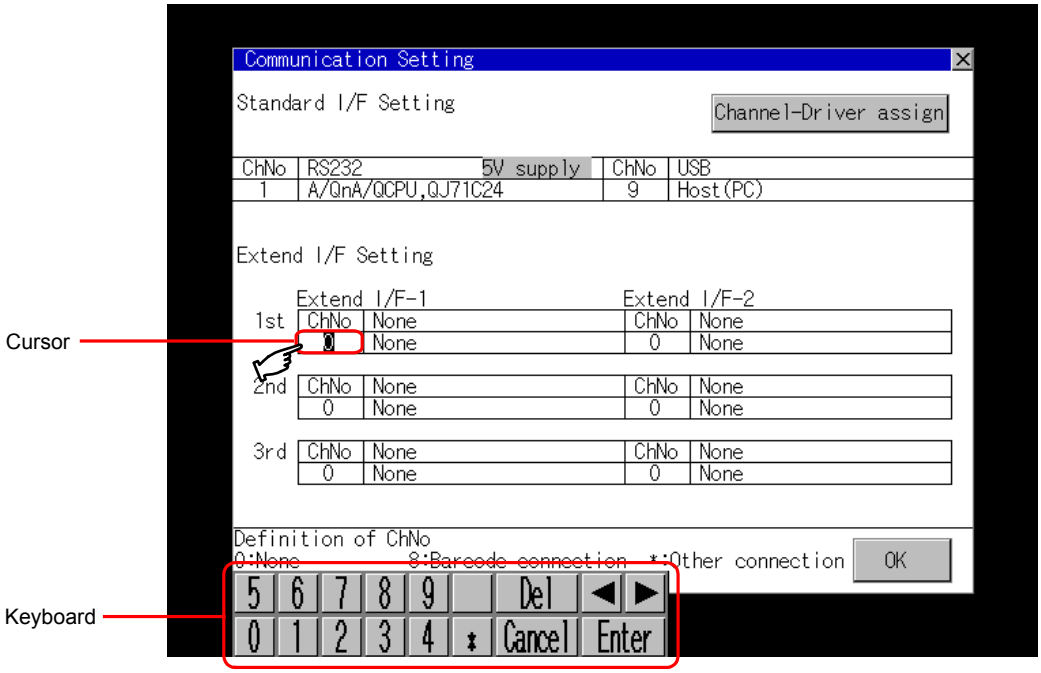
3 If ☒ touch button without touching OK button, the dialogue mentioned below is displayed.



2 Keyboard operation

1 Touch the numerical value to be changed.

2 Keyboard for numerical input is displayed and cursor is displayed simultaneously.
The key board display position chanegs by the position of numerical value touched.
(At the time of numerical input, displayed in the position which will not interrupt the inputting.)



3 Input numeric with keyboard.

- 0 to 9 Key : Input the numeric.
- Enter Key : Touching the Enter key completes numeric input and closes the keyboard.
- Cancel Key : Touching the Cancel key cancels numeric input and closes the keyboard.
- ◀ ▶ Key : Moves the cursor to the right or left side.
  Available only if any selectable item is at the right/left side of the cursor.
- Del Key : Del key is used when canceling the input by 1 character.
- * key and the key which is not mentioned do not function.

4 If Enter key is touched, numeric input is completed and keyboard is closed.

10. COMMUNICATION INTERFACE SETTING (COMMUNICATION SETTING)

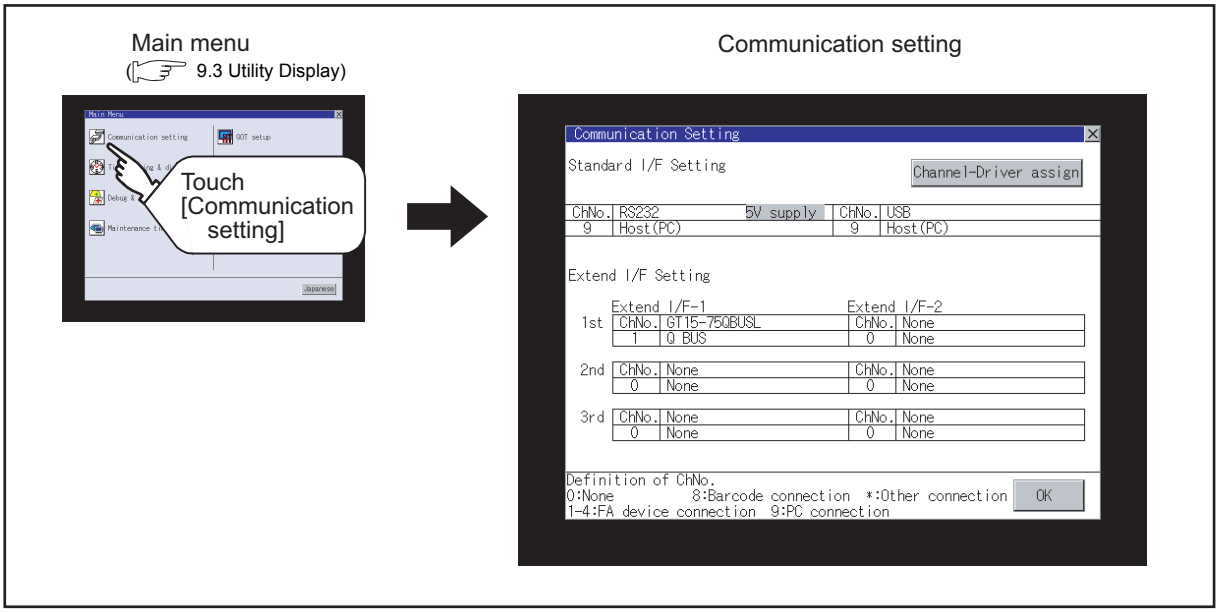
In the communication setting, the communication interface names and the related communication channel, communication driver names display and channel numbers are set.
Moreover, in the communication detail settings, the communication interface details are set. (Communication parameters setting)

10.1 Communication Setting

10.1.1 Communication setting functions

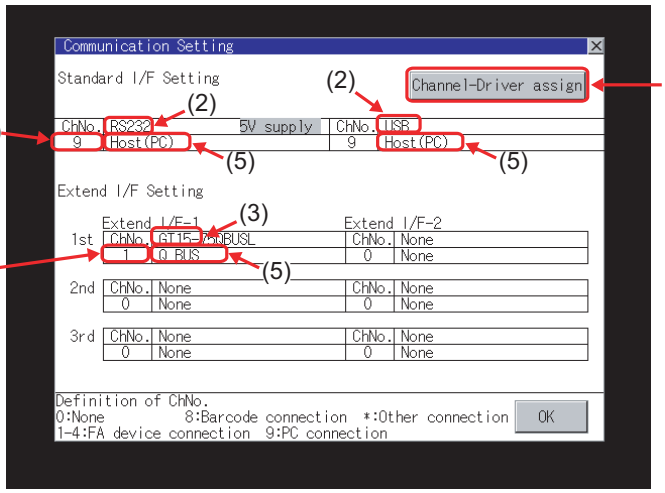
Function	Description
Channel-Driver assign	Change the assignment of channel No. and communication driver name.
Channel no. (Ch No.) setting	Set the channel numbers of the communication interface (Standard interface/ Extend interface).
Communication parameters setting	Set communication parameters of communication devices.

10.1.2 Communication setting display operation



10.1.3 Communication setting contents

This section describes setting items and display contents for Communication Setting.



(1) Channel-Driver assign

Channel No. can be assigned to the communication driver installed in the GOT.

(a) Communicating without setting [Communication Setting] of GT Designer2

Even without setting [Communication Setting] on GT Designer2, communication with controller is available by assigning channel No. with this function.

(☞ 10.1.4 *1* Channel-Driver assign operation)

(b) Changing the assignment of communication drivers to channels in the utility

Without using GT Designer2, the assignment of communication drivers to channels can be changed.

(When change a communication driver, the alternative communication driver has to be installed in GOT in advance.)

(2) Standard interface display BOX

Display the communication interface included as standard in GT15☐☐.

There are the following 2 types.

RS232 ••••• For communicating with PC (GT Designer2), controller

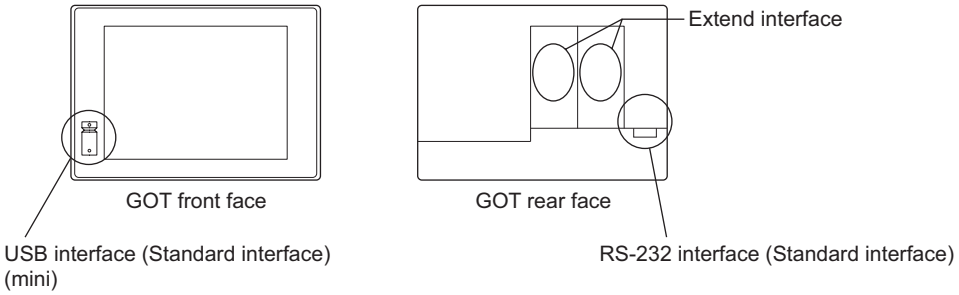
USB •••••••• For communicating with PC (GT Designer2)

(3) Extend interface display BOX

The name of the communication unit installed in the extend interface is displayed.

(Displays [None] when the communication unit is not mounted.)

Refer to 7.5 Communication Unit for details related to the communication unit.



(4) Channel number specification menu BOX
Set channel No. to use with standard interface or extend interface.
Refer to this section (5) for driver that can be assigned to each channel.

0: Set when the communication interface is not used.
1 to 4 :Set when connecting to a controller (Bar code reader is excluded.)
8: Set when connecting with bar code reader.
9: Set when connecting with PC (GT Designer2). (For USB and RS-232 interface, the simultaneous setting is possible. However, when either interface is during communication, communication is not possible for another interface.)
*: Set when using the gateway function (Connection to the controller is made with other than Ethernet.) and Ethernet download function.

- 5 to 7 can not be set.
- Fixed to 9 for the USB interface.

(5) Driver display BOX
The name of communication driver assigned to the channels or the driver set with the Communication Setting of GT Designer2 is displayed.
The displayed names are shown below.

Driver name	Compatible connection type	Displayed interface	Corresponding channel No.
Q BUS (Q)	Bus connection	Extend interface display BOX (☞ This section (3))	1 to 4
A/QnA BUS			
A/QnA/Q CPU, QJ71C24	Direct CPU connection, computer link connection, CNC connection	Standard interface display BOX: RS232 (☞ This section (2))	
MELSEC-FX	Direct CPU connection		
AJ71QC24	Computer link connection	Extend interface display BOX (☞ This section (3))	
AJ71UC24/C24	Computer link connection		
MELSECNET/10	MELSECNET/10 connection (PLC to PLC network), CNC connection	Extend interface display BOX (☞ This section (3))	
CC-Link(ID)	CC-Link connection (Intelligent device station)		
CC-Link(G4)	CC-Link connection (Via G4)		
E71 Connection	Ethernet connection, CNC connection		

(Continue to next page)

Driver name	Compatible connection type	Displayed interface	Corresponding channel No.
OMRON SYSMAC	OMRON PLC connection	Standard interface display BOX: RS232 (☞ This section (2)) Extend interface display BOX (☞ This section (3))	1 to 4
KEYENCE KV-700/1000	KEYENCE PLC connection		
SHARP JW	SHARP PLC connection		
TOSHIBA PROSEC T/V	TOSHIBA PLC connection		
HITACHI HIDIC H	HITACHI PLC connection		
HITACHI HIDIC H2			
MATSUSHITA MEWNET-FP	MATSUSHITA PLC connection		
YASKAWA GL	YASKAWA PLC connection		
YOKOGAWA FA500/FA-M3	YOKOGAWA PLC connection		
AB SLC500, AB 1:N	Allen-Bradley PLC connection		
AB MicroLogix			
SIEMENS S7-200	SIEMENS PLC connection		
SIEMENS S7-300/400			
Microcomputer connection	Microcomputer connection		
OMRON THERMAC/ INPANEL NEO	OMRON temperature controller connection		
YAMATAKE SDC/DMC	YAMATAKE temperature controller		
RKC SR Mini HG	RKC temperature controller connection		
FREQROL 500/700	Inverter connection		
MELSERVO-J3, J2S/M	Servo amplifier connection		
Barcode	Barcode reader connection		8
E71/Gateway	Ethernet connection and gateway function	Extend interface display BOX (☞ This section (3))	1 to 4
Gateway	Gateway function		*
Ethernet download	At Ethernet download		*
Host (PC)	At transfer of OS or project data, FA transparent function	Standard interface display BOX: RS232/USB (☞ This section (2))	9

Display [None] in the driver display BOX in case of the followings.

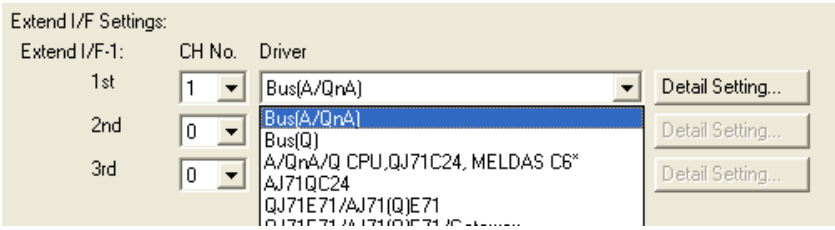
- The communication driver is not installed. (☞ 13.2 OS Information)
- In channel number specification menu BOX, [0] is set.
- The communication unit type and the communication driver are mutually not corresponding at the extend interface side.

When set the channel number to [9], the communication driver [Host (PC)] is automatically assigned.

Point

Precautions for communications between GOT and controller

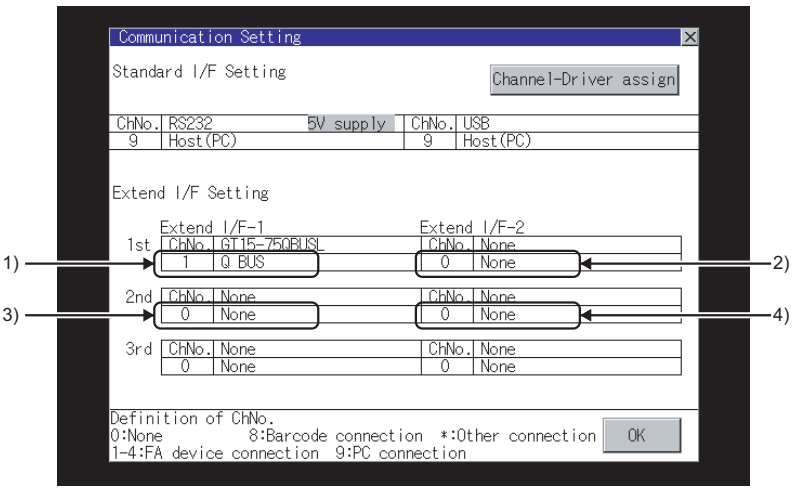
(1) Installing communication driver and downloading Communication Setting
The followings below are required for the communication interface to communicate with the controller.
1) Installing communication drivers (Up to 4 communication drivers)
2) Assigning the channel number and communication driver for the communication interface
3) Downloading the contents (project data) assigned in 2).
Perform1), 2), 3) by GT designer2.



Refer to the following for details.

- GT Designer2Version □ Screen Design Manual
  (3.7 Communication Interface Setting (Communication Settings))
- GT Designer2Version □ Basic Operation/Data Transfer Manual
  (8.3.1 Downloading project data [PC to GOT])

(2) When Communication Setting has not been downloaded.
The GOT automatically assigns the installed communication driver in the order of 1 to 4 as follows.(Only the extend interface is assigned automatically.)



1) ChNo.1, CCommunication driver installed at 1st
2) ChNo.2, CCommunication driver installed at 2nd
3) ChNo.3, CCommunication driver installed at 3rd
4) ChNo.4, CCommunication driver installed at 4th

(a) After communication driver is assigned automatically.

When saving the settings to the GOT with OK button after the automatic assignment of communication driver, automatic assignment will not be performed at the next time and after.

(b) Priority against [Communication Settings] of GT Designer2

If download the communication settings to the GOT with GT Designer2 after the automatic assignment, the GOT will operate with the communication settings of the GT Designer2. (The GOT operates with the latest communication settings.)

(3) When the communication driver does not match with the unit that is installed in the GOT

An error is displayed on the GOT when displaying [Communication setting].
If an error is displayed, confirm the combination of the communication driver and communication unit.
Refer to the following manual for the combination.

☞ GOT1000 Series Connection Manual (System Configuration in each chapter)

10.1.4 Communication setting display operation

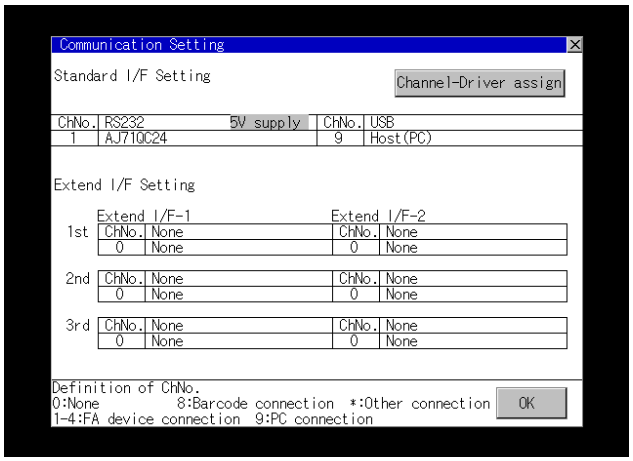
1 Channel-Driver assign operation

The following describes how to operate the Channel-Driver assign.
The example of changing to direct CPU connection (Communication driver: "A/QnA/QCPU, QJ71C24, MELDAS C6*") for the GOT of computer link connection (Communication driver: [AJ71QC24]) is used.

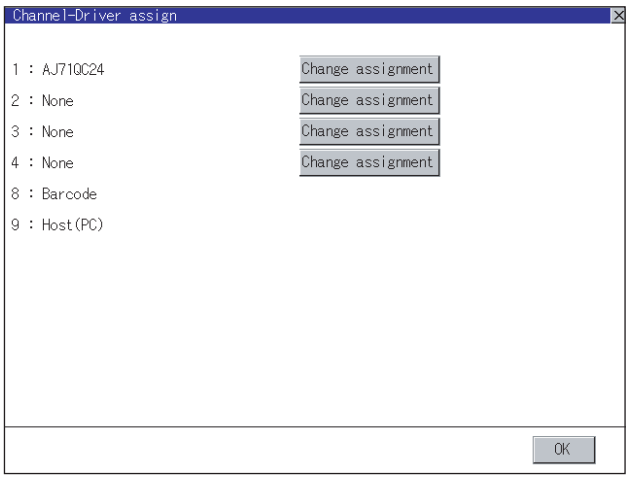
Point

Before the operation

The GOT automatically restarts after executing this setting.
If project data has been downloaded, the GOT starts monitoring of the controller after restarting.
Execute this setting after carefully confirming the safety.

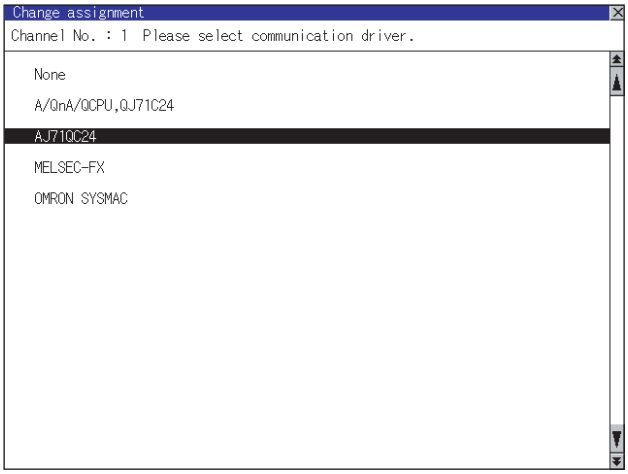


1 Install communication driver "A/QnA/QCPU, QJ71C24, MELDAS C6*" to GOT. (Download of [Communication Setting] from GT Designer is not required.)
After installing communication driver, touch the Channel Driver assign button in [Communication Setting].

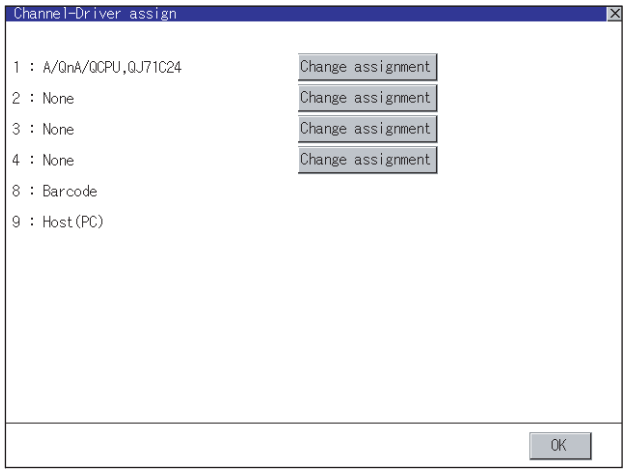


2 Touch the Change assignment button on the dislayed screen as shown left.

(Continued to next page)

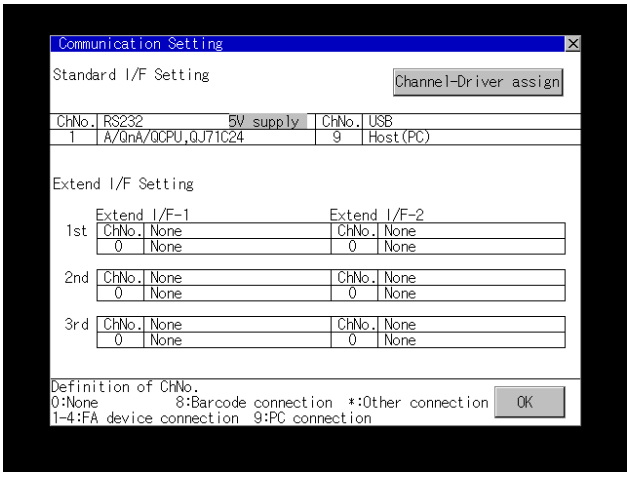


3 As the communication driver ([A/QnA/QCPU, QJ71C24]) installed in the GOT is displayed, touch it.



4 The screen returns to the Channel-Driver assign screen. Touch the OK button.

5 Touch the ⊠ button and return to the Communication Setting screen.



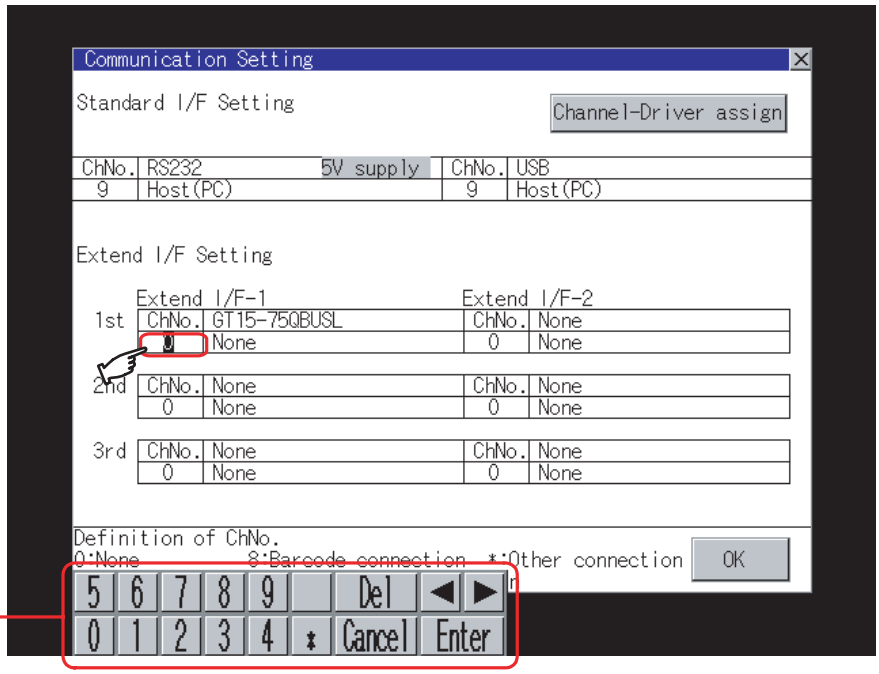
6 Confirm that the selected communication driver ([A/QnA/QCPU, QJ71C24]) is assigned.

7 After the confirmation, touch the OK button.

8 Touch the ⊠ button to restart GOT.

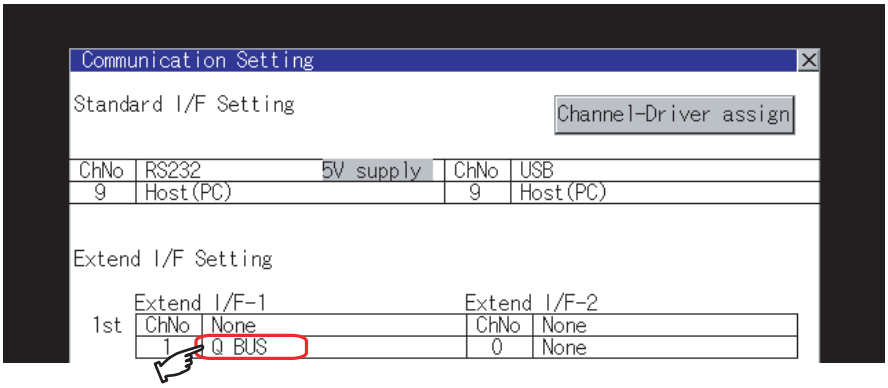
2 Channel number setting operation

1 Touch channel number specification menu BOX to be set.



2 The cursor for the channel number specification menu BOX is displayed.
Simultaneously the keyboard for a numerical input is displayed.

3 Input the channel number from the keyboard and touch Enter key, and the value is defined.
Simultaneously, the name of the communication driver corresponding to the channel number assigned by GT Designer2 is displayed in the driver display BOX.



3 Communication detail settings switching operation

1 If you touch the driver display BOX, the screen switches to the detailed setting screen of the related communication device.

(☞ 10.2 Communication Detail Settings)

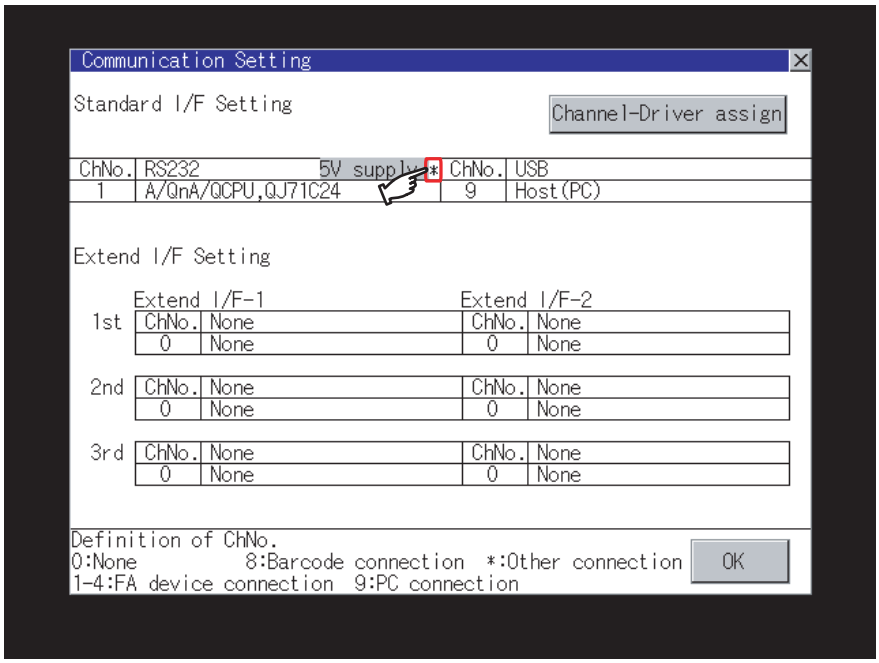
4 5V power supply setting operation

When connecting a controller to the RS-232 interface, whether to supply 5VDC power or not to the controller through 9 pins can be selected.

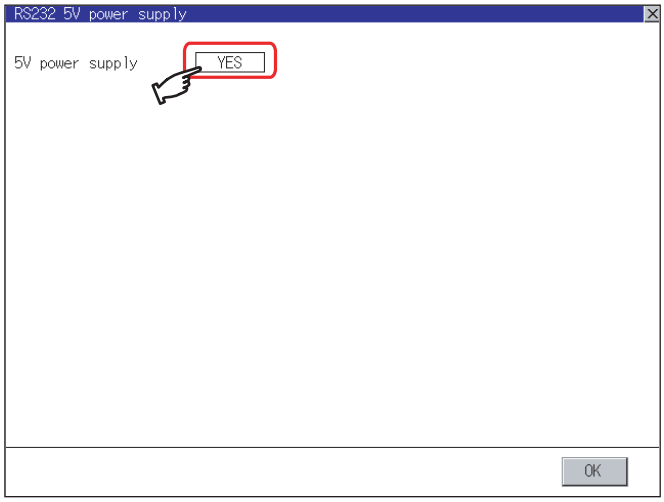
Thus, it is not necessary to connect an external power supply.

When setting the RS-232 interface to "9" (Host (PC)), the 5V supply is automatically changed to [NO].

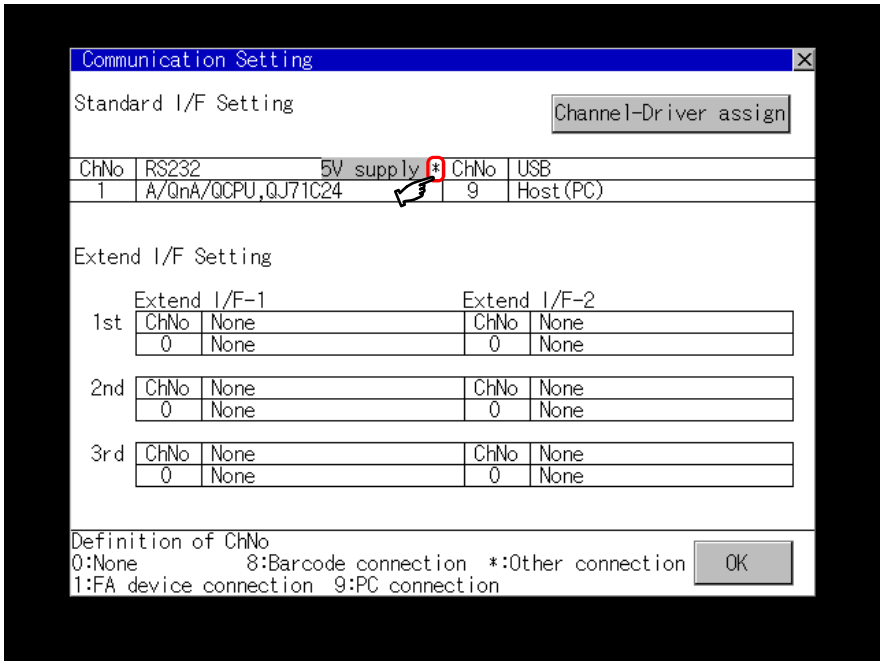
1 Touch [5V supply].



2 Select and define whether 5V power supply is supplied or not.



3 After setting completion, [∗] is displayed indicating that 5V power supplying setting is on.



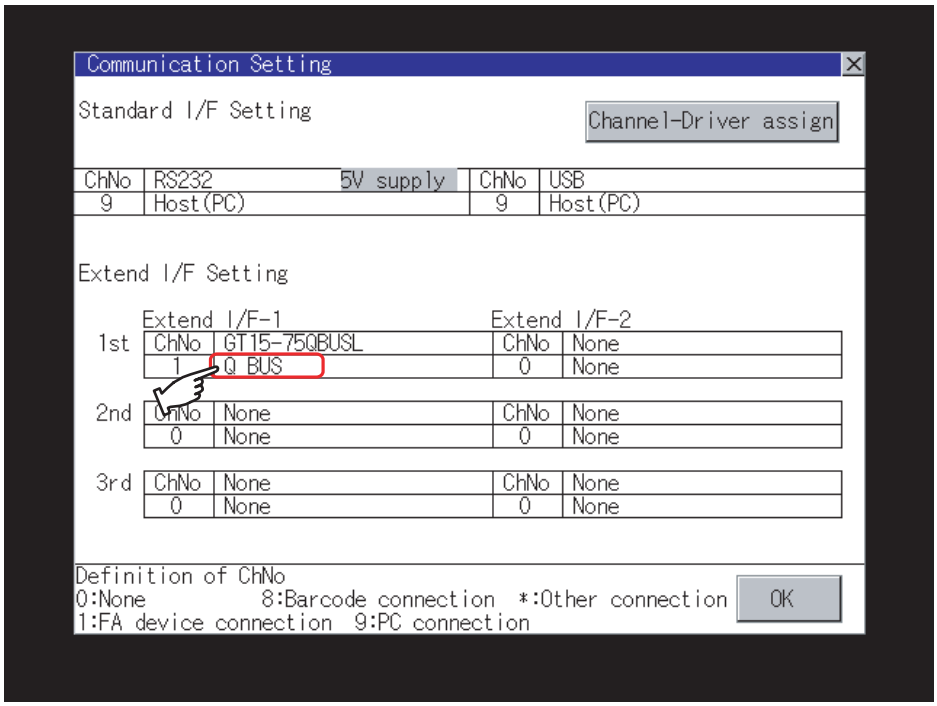
10.2 Communication Detail Settings

10.2.1 Communication detail settings functions

Function	Description
Communication parameters setting	Set various communication parameters of communication devices. The settable parameters differ according to the communication device.
Keyword setting	For the FX series PLCs, key word for protecting program in the PLC can be set.
Key word deleting	For the FX series PLCs, key word for protecting program in the PLC can be deleted.
Key word protection cancel	For the FX series PLCs, the program protection status in the PLC can be cancelled.
Keyword protection	For the FX series PLCs, the cancelled program protection status in the PLC can be returned to the protection status again.

10.2.2 Communication detail settings display operation

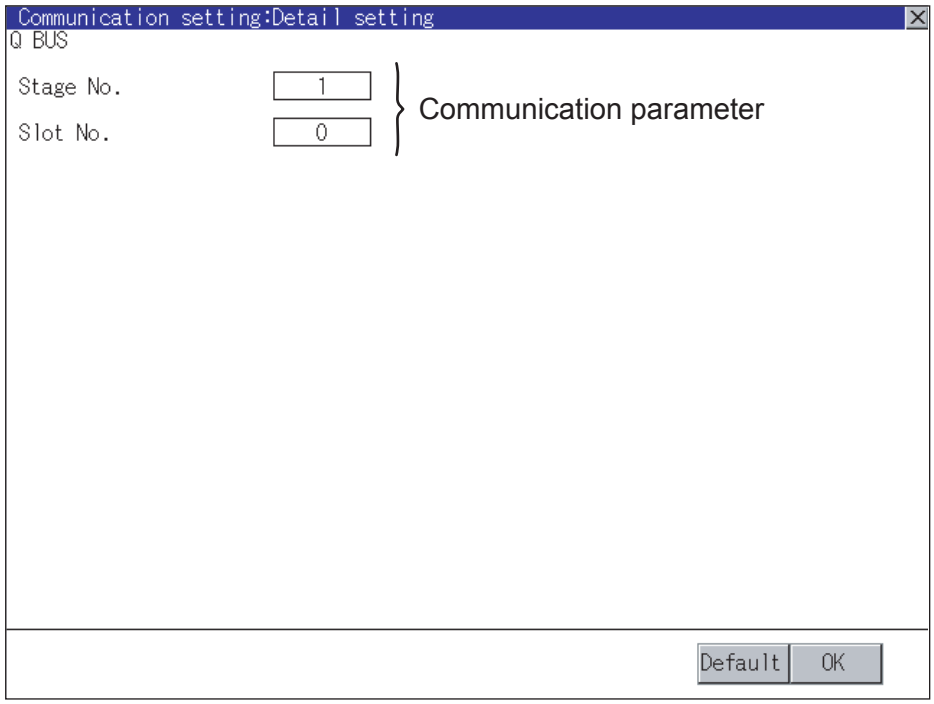
1 Touch the driver display BOX of the communication parameter to be set in the communication setting screen.



2 The screen switches to the communication detail setting screen.

Set communication parameters from this screen.
Refer to the following for the setting change operation.

☞ 9.3.3 Basic operation of settings change



Point

Communication parameter setting by Designer2

Set the communication parameters for each communication driver at [Communication Settings] in [System Environment] of GT Designer2.
When change the communication parameters after downloading project data, change the setting at communication detail setting of GOT.

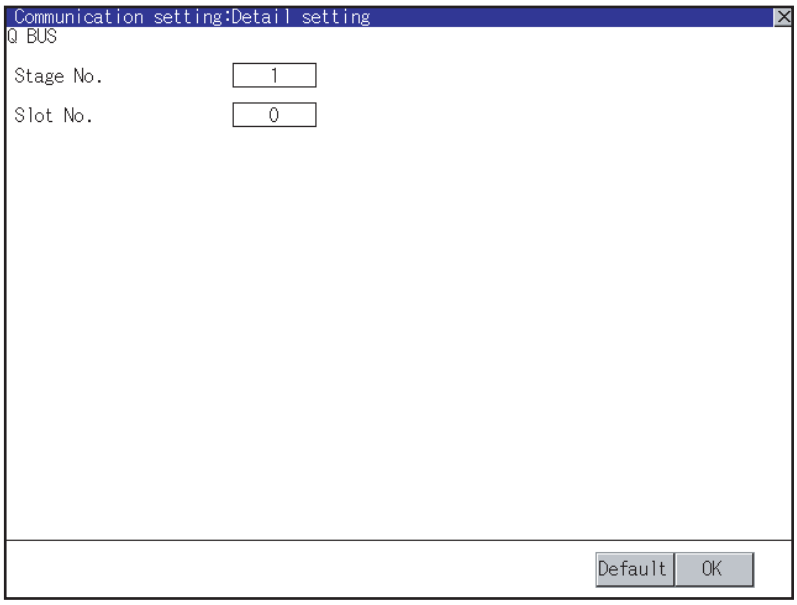
☞ GT Designer2 Version □ Screen Design Manual
(3.7 Communication Interface Setting (Communication setting))

10.2.3 Display contents of communication detail settings

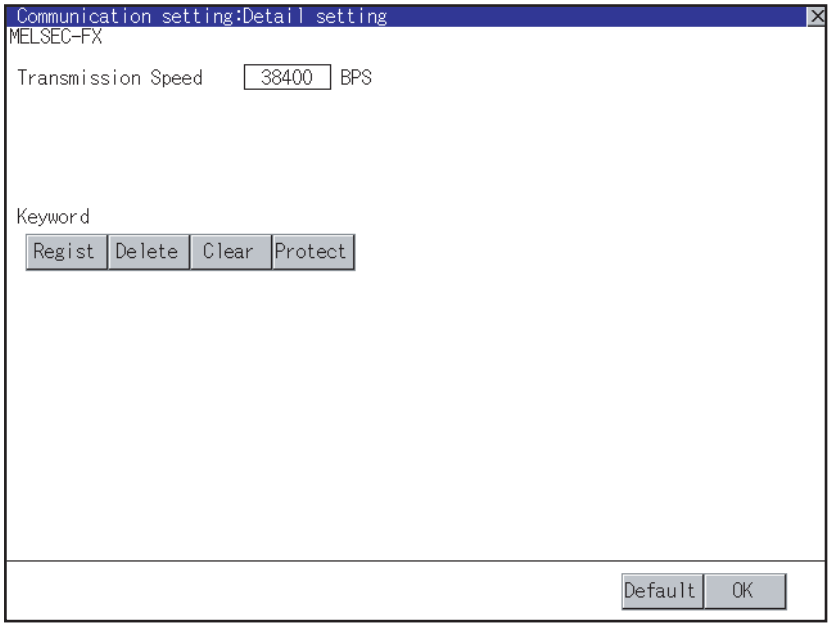
The contents of Communication Detail Settings varies according to driver type.

This section explains setting items different from the communication detail settings of the GT Designer2. For setting items other than described in this section, refer to the following manual.

☞ GT Designer2 Version□ Screen Design Manual
(3.7 Communication Interface Setting (Communication Settings))



(1) MELSEC-FX



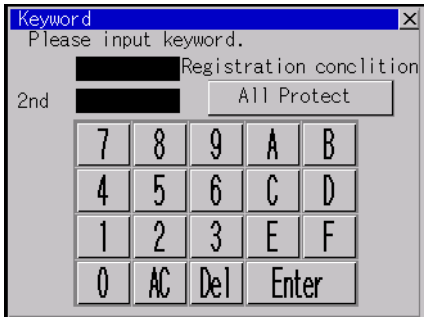
Key word registration, deletion and protection delete

1 Registration

Register key words.

1 Touching the [Regist] key pop-up displays the keyboard for inputting a keyword.

2 Input a keyword and touch the [Enter] key, and the registration completes.
Up to 8 characters can be set for keyword with using A to F and 0 to 9.



PLC connected	Setting	
	When registering keyword and 2nd keyword	When registering keyword only
FX CPU compatible with 2nd keyword	[Registration condition]*1 can be selected.	[Registration condition]*1 cannot be selected.
FX CPU not compatible with 2nd keyword	—	

*1 [Registration condition]

The access restriction can be selected from [Read/Write Protect], [Write Protect], and [All Protect].
For access restriction on each setting, refer to the following manual.

☞ The User's Manual of the FX series PLC you are using

Point

(1) How to select a keyword protection level

For equipments that are allowed to operate the FX PLC on line, 3 levels of protection level can be set.

When performing monitoring or changing settings with any on-line equipment is required, set password with referring to the following.

(a) When setting keyword only

Select a protection level by the initial letter of keyword.

All operation protect: Set a keyword with initial letter of "A", "D" to "F", or "0" to "9".

Anti-plagiarism: Set a keyword with initial letter of "B".

Incorrect write protect: Set a keyword with initial letter of "C".

(b) When setting keyword and 2nd keyword

Select a protection level by [Registration condition].

(2) Monitoring availability at each keyword protection level

Device monitoring availability at each keyword protection level is shown in the following.

Item		When registering keyword only			When registering keyword and 2nd keyword			Keyword not registered or protection cancelled
		All operation protect	Anti-plagiarism	Incorrect write protect	All on-line operation protect	Read/ write protect	Write protect	
Monitoring devices		○	○	○	×	○	○	○
Changing devices	T, C set value and file register (D1000 and the following)	×	×	×	×	○	○	○
	Other than the above	○	○	○	×	○	○	○

(3) Difference between all online operations prohibition and all operations prohibition

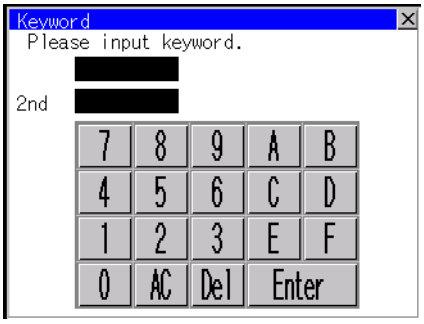
When specifying All online operations prohibited, displaying devices and inputting data with a programming tool or GOT are all prohibited.

When all operations are prohibited, displaying devices and inputting data with the GOT are enabled while all operations using a programming tool are prohibited.

2 Deletion

Delete a registered keyword.

1. Touching the [Regist] key pop-up displays the keyboard for inputting a keyword.
2. Input a key word and touch the [Enter] key, and the keyword is deleted.

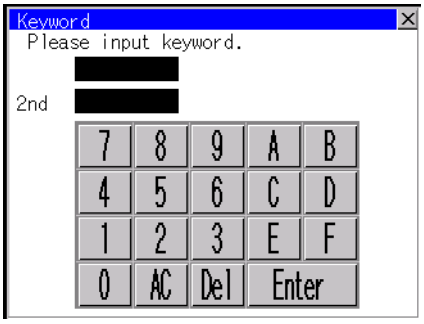


PLC connected	Setting
FX CPU compatible with 2nd keyword	Input a keyword to delete.
FX CPU not compatible with 2nd keyword	Input the keyword to delete only into the keyword. The 2nd keyword will be ignored.

3 Protection delete

Delete the protection by key word in order to access to a FX PLC to which a key word is registered.

1. Touching the [Clear] key pop-up displays the keyboard for inputting a keyword.
2. Input a keyword and touch the [Enter] key to delete the protection.



PLC connected	Setting
FX CPU compatible with 2nd keyword	Input a keyword to delete the protection.
FX CPU not compatible with 2nd keyword	Input a keyword to delete only into the keyword. The 2nd keyword will be ignored.

4 Protection

Reset the keyword in which protection has been deleted to the protection status.

1. Touch the [Protect] key, and the keyword goes to a protected status.

11. DISPLAY AND OPERATION SETTINGS (GOT SET UP)

Setting screen for display and setting screen for operation can be displayed from GOT setup.
In the setting screen for display and the setting screen for operation, the following settings can be set.

Item	Description	Reference page
Display	Opening screen time, screen save time, screen save backlight, language, human sensor, sensor detect level, sensor detect time, sensor off delay	11-2
	Brightness	11-11
Operation	Buzzer volume, window move buzzer volume, Key sensitivity, Key reaction speed	11-13
	Security setting	11-17
	Utility call key	11-19
	Touch panel calibration	11-22
Q/QnA ladder monitor	Data save location	11-25
Transparent mode	Ch No.	11-28

11.1 Display Settings

11.1.1 Display setting functions

Setting regarding display is possible.
The items which can be set are shown below. When each item part is touched, the respective setting becomes possible.

Items	Description	Setting range
Opening screen time	The title display period at the main unit boot can be set.	0 to 60 seconds *1 <At factory shipment: 5 seconds >
Screen save time	The period from the user stops the touch panel operation till the screen save function starts can be set.	0 to 60 minutes <At factory shipment: 0 minutes>
Screen save backlight	Whether turn ON or OFF the backlight simultaneously at the screen save function start can be specified.	ON/OFF <At factory shipment: OFF>
Language	Confirmation of the current language and switching language can be performed regarding with the language displayed by utility and dialogue.	Japanese/English <At factory shipment: Japanese>
Brightness, Contrast	The brightness can be adjusted. ☞ 11.2 Brightness, Contrast Adjustment	—
Human sensor GT1595-X GT1585-S	Screen saver status cancel by human sensor can be set to Effective or Invalid.	Effective/Invalid <At factory shipment: Effective>
Sensor detect level *2 GT1595-X GT1585-S	The sensor detect level can be set.	0 to 10 <At factory shipment:10>
Sensor detect time *2 GT1595-X GT1585-S	The time corresponding to the [Sensor detect level] is displayed. (setting is disabled) When the [Sensor detect level] is changed, the corresponding time is reflected by touching Enter button.	0 to 4 <At factory shipment: 4sec>
Sensor off delay GT1595-X GT1585-S	The time period from when the human sensor detects no human movement until the Human Sensor Detection Signal (System Signal 2-1.b5) turns OFF can be set.	0Min 10Sec to 60Min 0Sec <At factory shipment: 0Min 10Sec>

*1: If setting 0, the title screen is not hidden.
The title screen is always displayed for 4 seconds or longer (which changes depending on the project data contents).

*2: The monitoring time corresponding to the sensor detect level (0 to 10) is as follows.
As the sensor detect level becomes greater, the sensitivity of the human sensor becomes higher.

Sensor detect level	10	9	8	7	6	5	4	3	2	1	0
Monitoring time [s]	0	0.1	0.2	0.4	0.8	1	1.5	2	2.5	3	4

Point

(1) Display setting by GT Designer2

Set title display period, screen save time and screen save backlight at [GOT set up] in [System Environment] of GT Designer2.

When change a part of the setting after downloading the project data, change the setting by [Display] screen of the GOT.

☞ GT Designer2 Version □ Screen Design Manual (3.8 Setting of the GOT display and operation (GOT setup))

(2) Screen save time

Using the system information function can compulsorily switch the controller to the screen saving status (Forced Screen Saver Disable Signal) or disable the screen save time (Automatic Screen Saver Disable Signal) set with Utility.

☞ GT Designer2 Version □ Screen Design Manual (3.6 Setting System Information)

(3) Screen save backlight

When [Screen save backlight] is set to [ON], using the system information function (Backlight OFF output signal) can switch the backlight OFF from the controller.

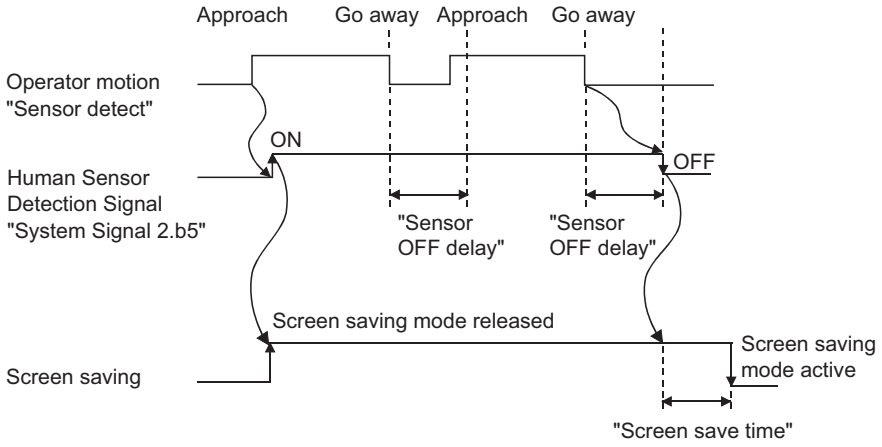
When [Screen save backlight] is set to [OFF], the above signal has no effect on the screen save backlight.

☞ GT Designer2 Version □ Screen Design Manual (3.6 Setting System Information)

(4) Display control by human sensor (Specific to GT1595-X, GT1585-S)

The human sensor is a function that releases the GOT from the screen saving mode without the necessity to touch the GOT.

This function releases the GOT from the screen saving mode when the operator has come closer to the GOT.



When there is no operator around the GOT for the time set as "Sensor OFF delay", the "Human Sensor Detection Signal" turns OFF.

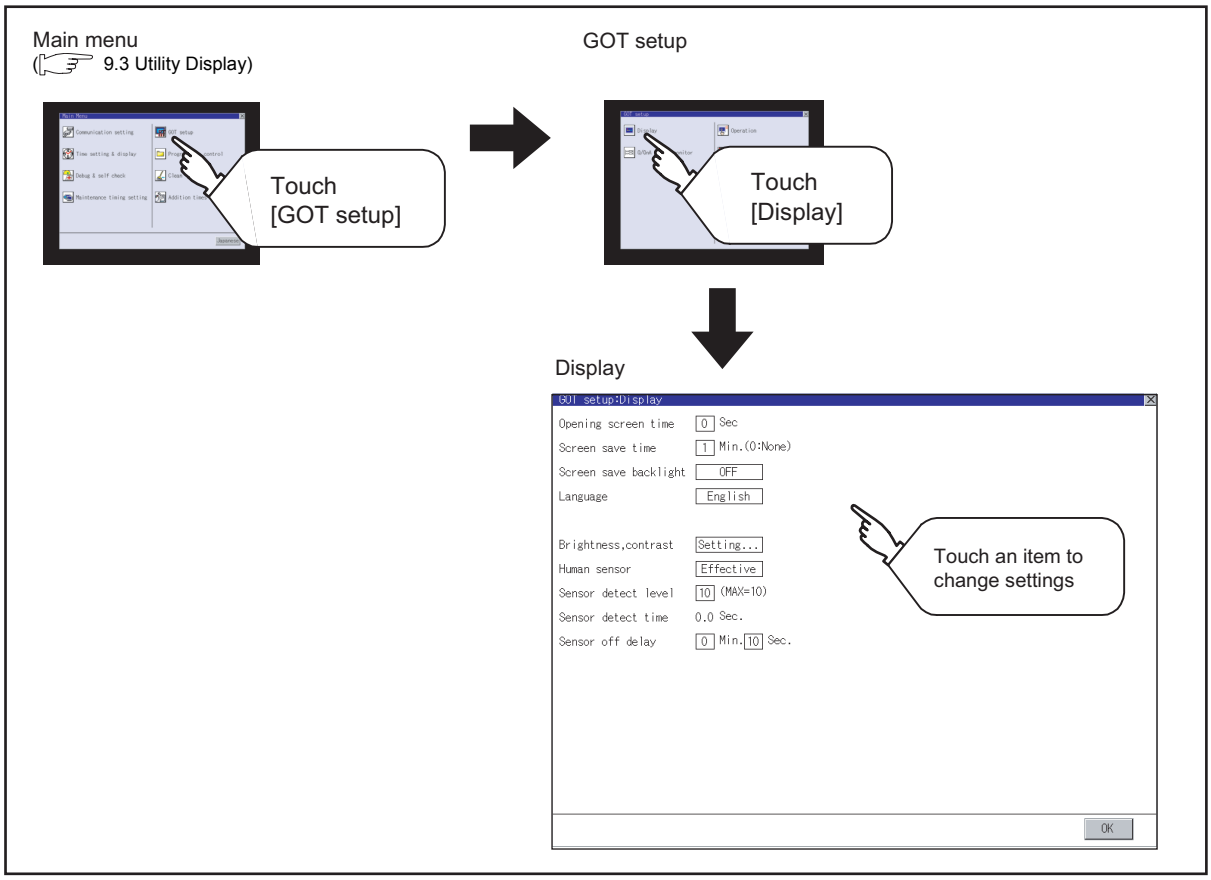
When the time set as the "Screen save time" elapses after the "Human Sensor Detection Signal" turns OFF, the GOT enters the screen saving mode.

Refer to the following manual for the Human Sensor Detection Signal (System Signal 2-1.b5).

☞ GT Designer2 Version □ Screen Design Manual (3.6 Setting System Information)

(5) When setting the human sensor to invalid (Specific to GT1595-X, GT1585-S)
Even if setting the human sensor to invalid by the utility, the Human Sensor Detection Signal (System Signal 2-1.b5) turns ON when the human sensor detects human movement.
Unintended operation may result, therefore, if controlling the Forced Screen Saver Enable Signal (System Signal 1-1.b1) and Human Sensor Detection Signal associating them with each other by a sequence program, etc.
When setting the human sensor to invalid, review the related sequence program, etc.

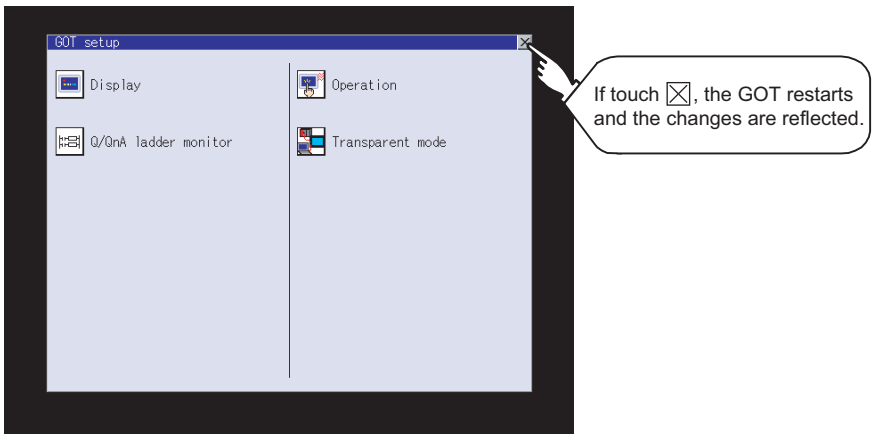
11.1.2 Display operation of display setting



Point

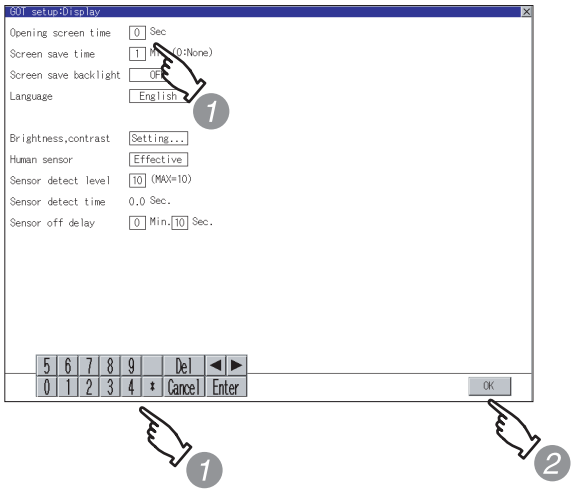
Restart after setting change

If return the display to the GOT setup screen by touching the ☒ button after the setting of each item is changed and touch the ☒ button on the GOT setup screen, the GOT will restart.
After GOT restarts, it is displayed with the changed settings.
If restarted the GOT by powering OFF the GOT without the procedure above, the setting contents are canceled without reflected.



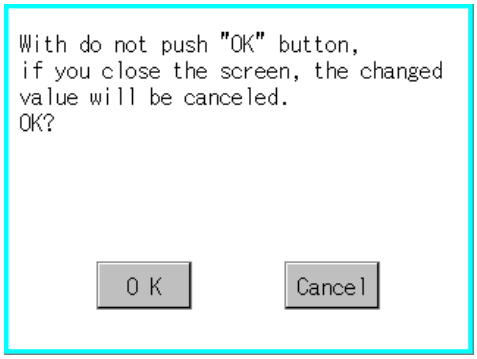
11.1.3 Display setting operations

1 Opening screen, screen save time, sensor detect level



1 If touching the setting (numerical), keyboard is displayed. Input numeric with the keyboard.

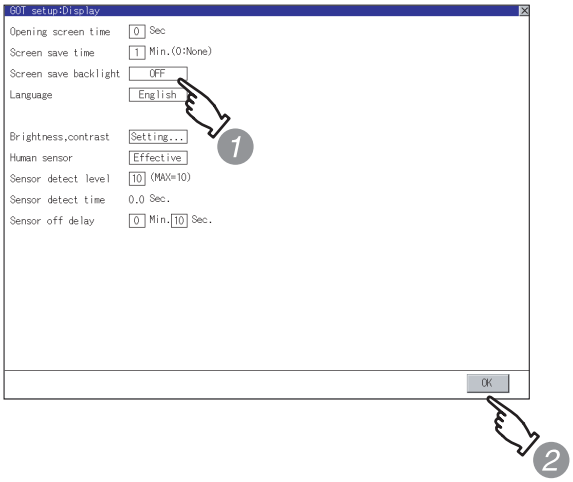
2 Setting contents are defined if [OK] button is touched.



3 If touch ☒ button without touching [OK] button, the dialog mentioned left is displayed.

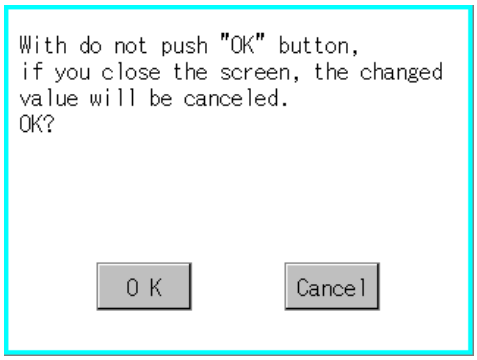
4 If close the display setting and GOT setup screens after completing the setting of all items to change with ☒ button, GOT restarts and reflects the setting contents.

2 Screen save backlight



1 Setting item is changed if setting item is touched. (ON ⇄ OFF)

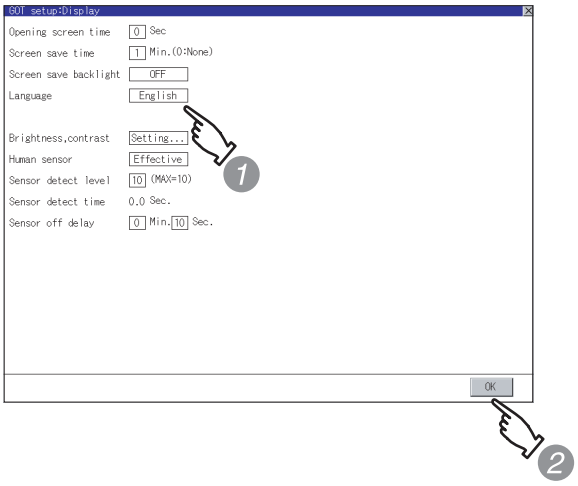
2 Setting contents are defined if [OK] button is touched



3 If touch ⊠ button without touching [OK] button, the dialog mentioned left is displayed.

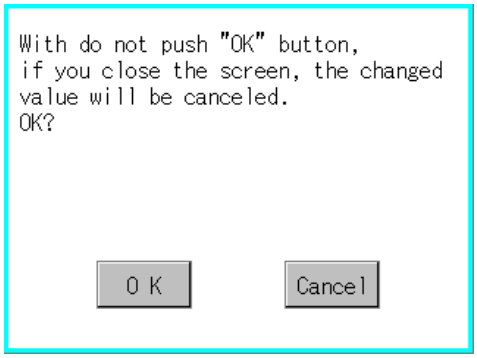
4 If close the display setting and GOT setup screens after completing the setting of all items to change with ⊠ button, GOT restarts and reflects the setting contents.

3 Language



1 Setting items are changed if setting item is touched. (English ⇄ Japanese)

2 Setting contents are defined if [OK] button is touched. The language display does not change till 4 is carried out.



3 If touch ☒ button without touching [OK] button, the dialog mentioned left is displayed.

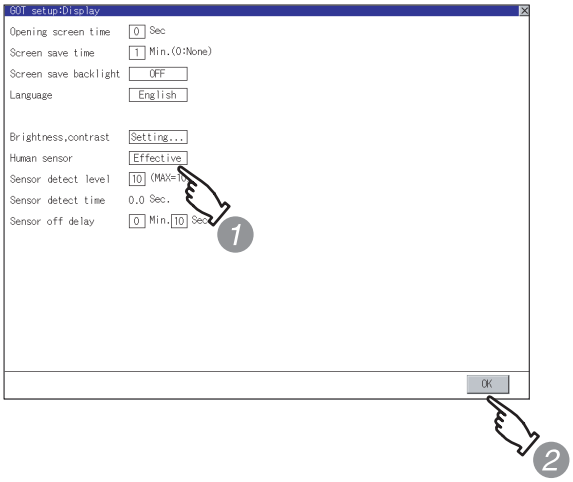
4 If close the display setting and GOT setup screens after completing the setting of all items to change with ☒ button, GOT restarts and reflects the setting contents.

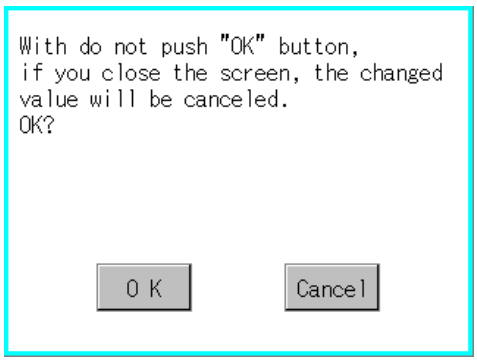
4 Brightness, Contrast

Refer to the following for brightness, contrast setting.

☞ 11.2 Brightness, Contrast Adjustment

5 Human sensor





1 Setting item is changed if setting item is touched. (Effective ⇄ Invalid)

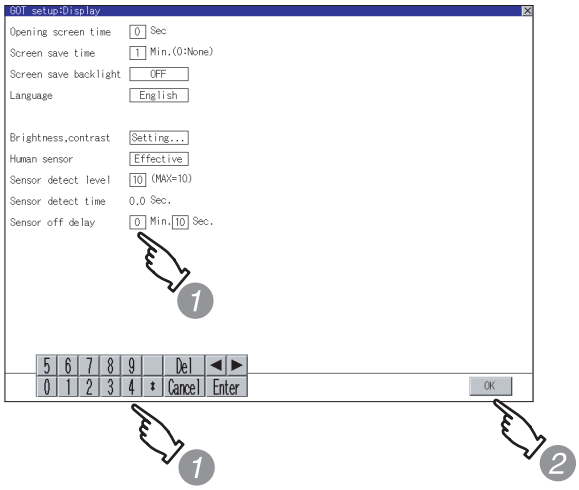
2 Setting contents are defined if [OK] button is touched.

3 If touch ☒ button without touching [OK] button, the dialog mentioned left is displayed.

4 If close the display setting and GOT setup screens after completing the setting of all items to change with ☒ button, GOT restarts and reflects the setting contents.

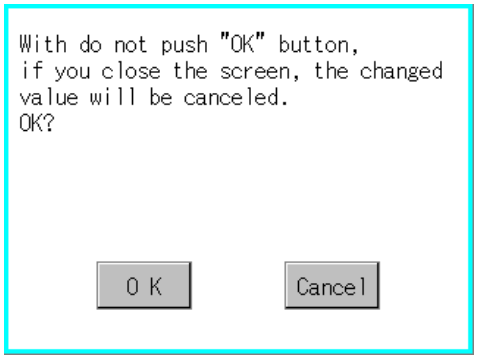
6 Sensor off delay

GT1595 -X GT1585 -S



1 If touching the setting (numerical), keyboard is displayed. Input numeric with the keyboard.
To move the cursor, touch the ◀ or ▶ button.

2 Setting contents are defined if OK button is touched.



3 If touch ☒ button without touching OK button, the dialog mentioned left is displayed.

4 If close the display setting and GOT setup screens after completing the setting of all items to change with ☒ button, GOT restarts and reflects the setting contents.

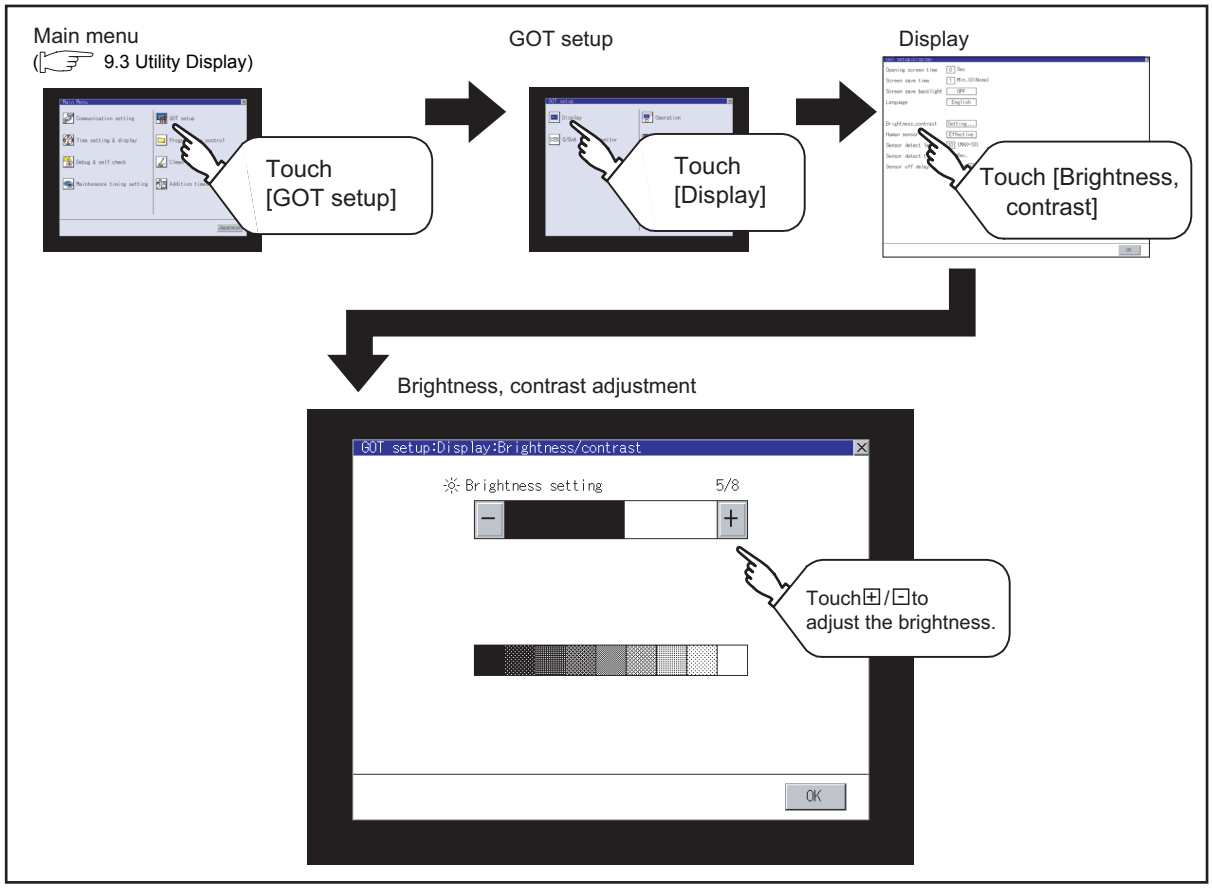
11.2 Brightness, Contrast Adjustment

11.2.1 Brightness adjustment function

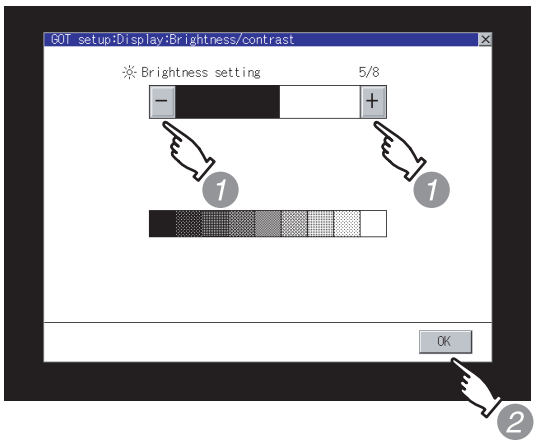
Brightness can be adjusted.

Function	Description
Brightness setting	Brightness of display part can be adjusted by 8 levels. (Four levels for the GT1575-VN, GT1572-VN or GT1562-VN)

11.2.2 Display operation of brightness, contrast

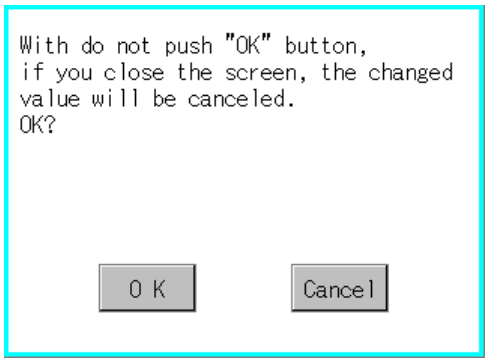


11.2.3 Brightness adjustment operation



1 Brightness can be adjusted by touching [+], [-] key of brightness adjustment.

2 Setting contents are defined if [OK] button is touched.



3 If touch [OK] button without touching ☒ button, the dialog mentioned left is displayed.

4 If close the display setting and GOT setup screens after completing the setting of all items to change with ☒ button, GOT restarts and reflects the setting contents.

11.3 Operation settings

11.3.1 Operation setting functions

Setting regarding GOT operation can be set.
The items which can be set are described below. If touch the each item part, the respective setting becomes possible.

Function	Description	Setting range
Buzzer volume setting	Buzzer volume setting can be changed.	OFF/SHORT/LONG <At factory shipment: SHORT>
Window move buzzer volume setting	Whether turn ON/OFF buzzer when move window can be selected.	ON/OFF <At factory shipment: ON>
Security setting screen change	Security level change screen can be displayed. ☞ 11.4 Security Level Change	—
Utility call key screen change	Utility call key setting screen can be displayed. ☞ 11.5 Utility call key setting	—
Key sensitivity setting	The touch panel sensitivity when touching the GOT screen can be set. E.g. a setting can be changed when double-touch is made when touching the GOT screen only once. (For preventing chattering)	1 to 8 *1
Touch panel calibration GT1595 -X	Touch panel reading error can be corrected. ☞ 11.6 Adjusting the Touch Panel Position (Touch panel calibration Setting)	—

*1 Relation between the [Key sensitivity] setting and [Key reaction speed]

The larger the set value in [Key sensitivity] is, the shorter the time taken from touching the touch panel until the GOT responds becomes.
E.g. decrease the value set for [Key sensitivity] when double-touch is made when touching the GOT screen only once. (Decrease the reaction speed.)
The relation between the [Key sensitivity] setting and [Key reaction speed] is as follows.

[Key sensitivity] setting	Quick response ←							→ Slow response
	8	7	6	5	4	3	2	1
[Key reaction speed]	- 20ms-	- 10ms	± 0ms (Standard)	+ 30ms	+ 60ms	+ 120ms	+ 240ms	+ 480ms

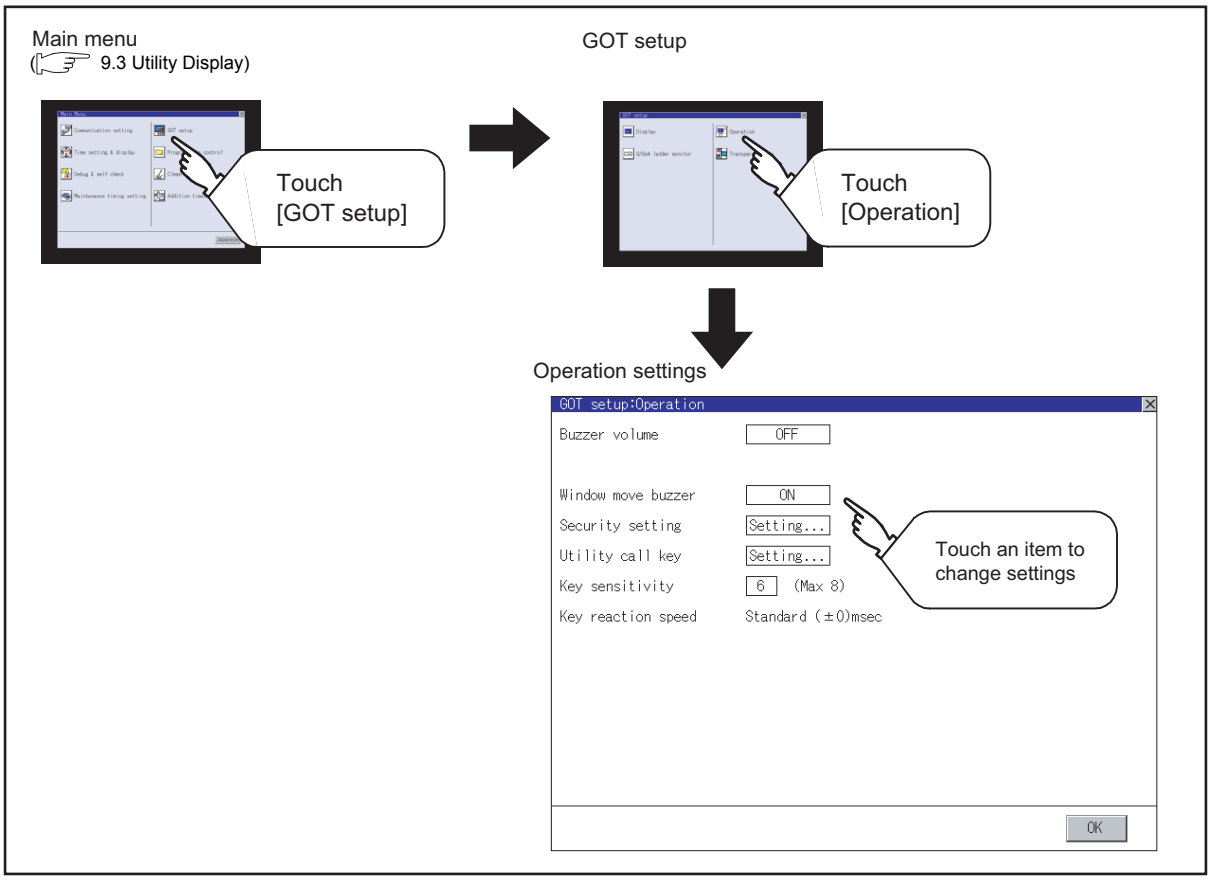
Point

Operation settings by GT Designer2

Set buzzer volume and window move buzzer volume by [GOT setup] in [System Environment] of GT Designer2.
When change a part of the setting, change the setting by the GOT display setting after downloading the project data.

☞ GT Designer2 Version □ Screen Design Manual (3.8 Setting of the GOT display and operation (GOT setup))

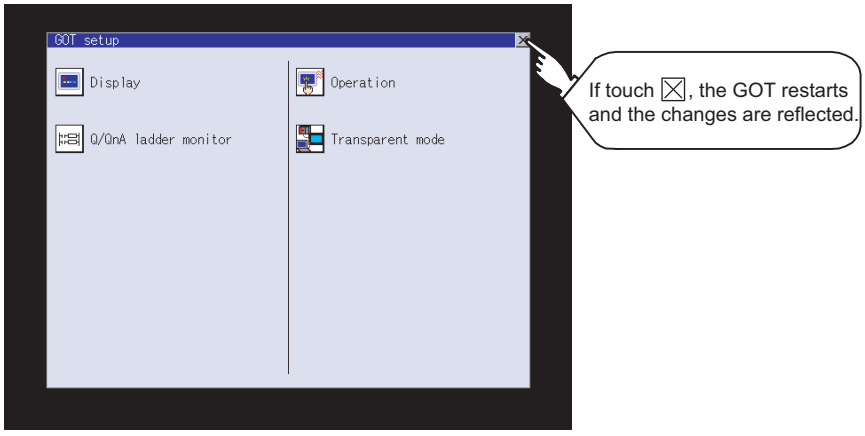
11.3.2 Display operation of display setting



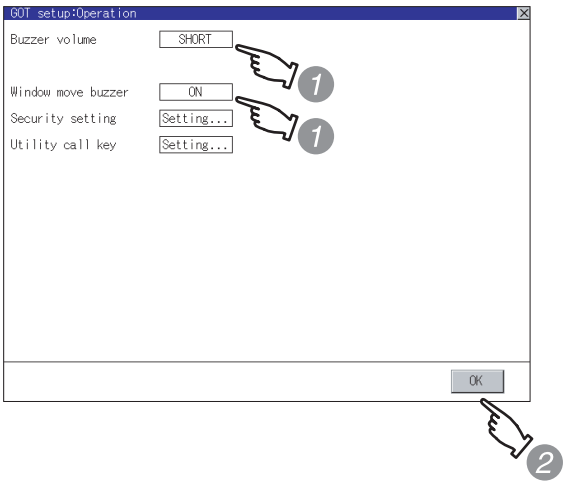
Point

Restart after setting change

If return the display to the GOT setup screen by touching the ☒ button after the setting of each item (excluding the security setting) is changed and touch the ☒ button on the GOT setup screen, the GOT will restart.
After GOT restarts, it is displayed with the changed settings.
If restarted the GOT by powering OFF the GOT without the procedure above, the setting contents are canceled without reflected.



1 Buzzer volume, window move buzzer

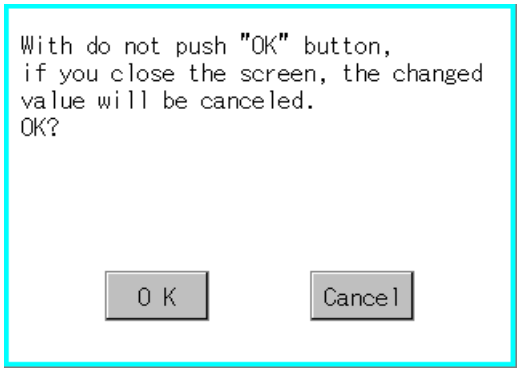


1 Setting items are changed if setting item is touched.

Buzzer volume : SHORT → LONG → OFF

Window move buzzer: OFF ⇄ ON

2 Setting contents are defined if [OK] button is touched.



3 If touch ☒ button without touching [OK] button, the dialog mentioned left is displayed.

4 If close the display setting and GOT setup screens with ☒ button after completing the setting of all items to change, GOT restarts and reflects the setting contents.

2 Security setting

Refer to the following for the security setting operation

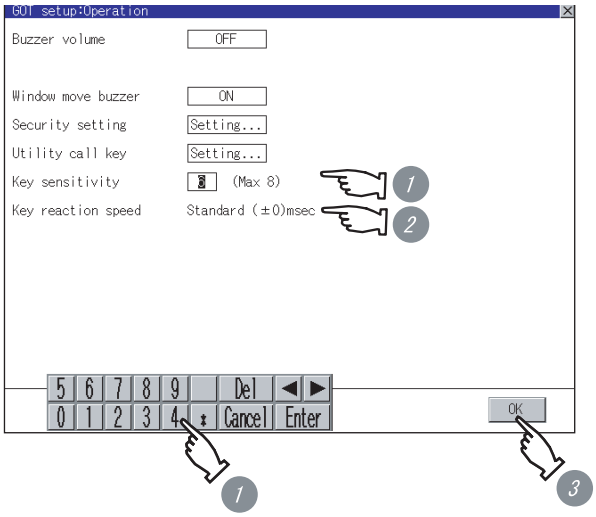
☞ 11.4 Security Level Change

3 Utility call key

Refer to the following for the utility call key operation

☞ 11.5 Utility call key setting

4 Key sensitivity setting



1 If touching the setting items, keyboard is displayed.
Input numeric with the keyboard.

2 The key response speed corresponding to the [Key sensitivity] setting is displayed.

3 Touching the OK button determines the setting.

5 Touch panel adjustment

Refer to the following for touch panel adjustment operation.

11.6 Adjusting the Touch Panel Position (Touch panel calibration Setting)

11.4 Security Level Change

11.4.1 Security level change functions

Changes the security level to the same security level set by each object or screen switch.
To change the security level, input the password of the security level which is set in GT Designer2.

Security level setting..... ☞ GT Designer2 Version □ Screen Design Manual (5.8 Security function)

Password setting..... ☞ GT Designer2 Version □ Screen Design Manual (3.5 Set Password)

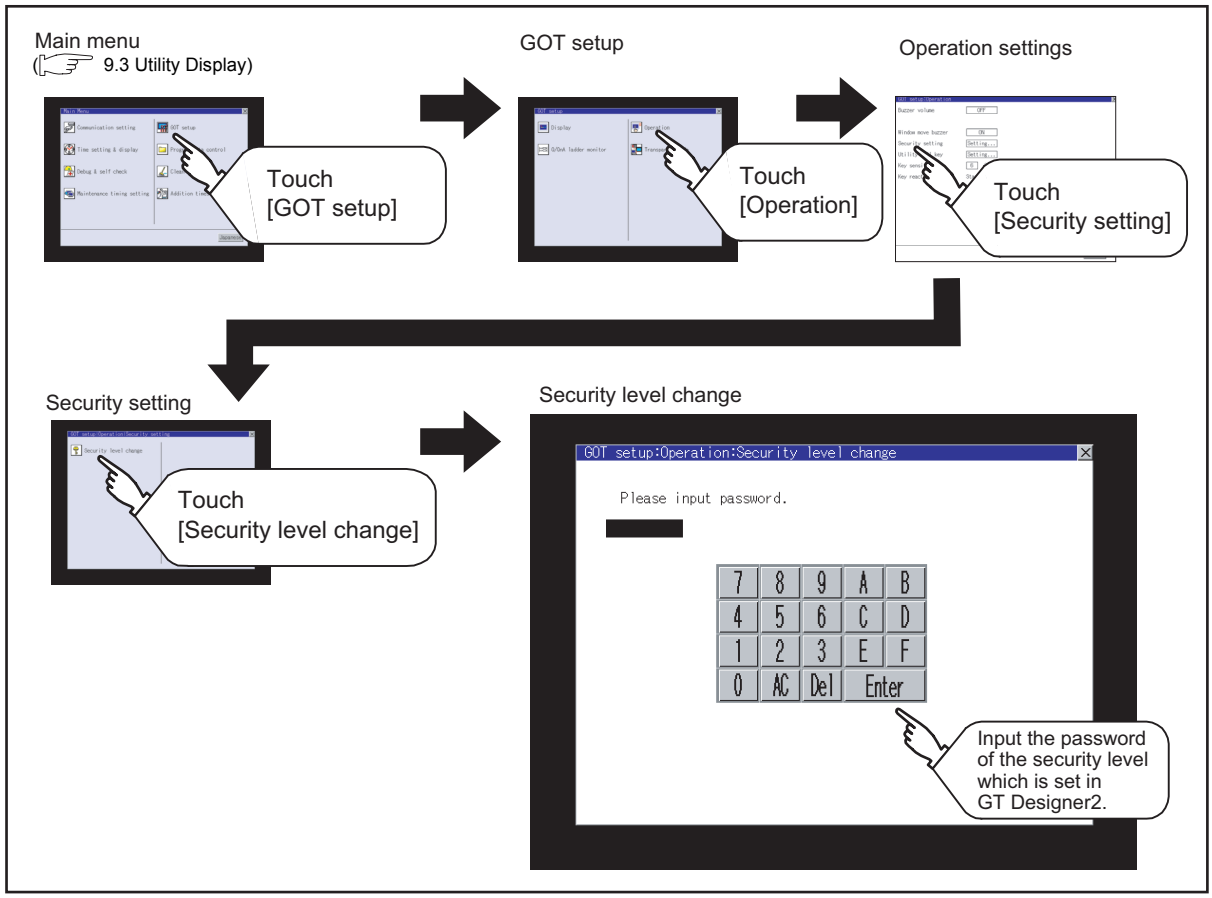
Point

Restrictions on screen display

The security level change screen cannot be displayed when project data do not exist in GOT.

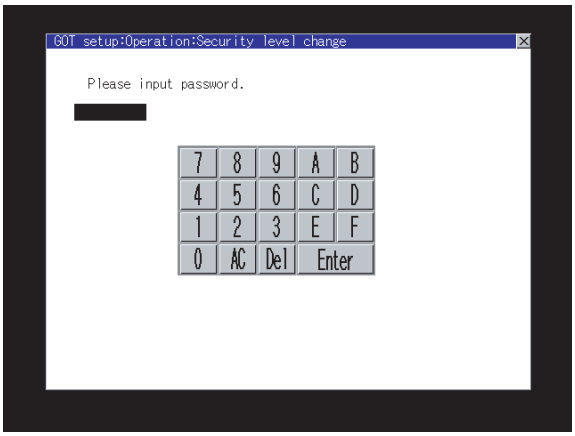
Change the security level after downloading the project data to GOT.

11.4.2 Security change display operation



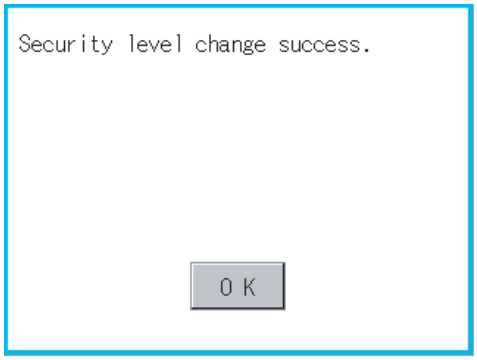
11.4.3 Security level change operation

1 Password input operation



1 By touching 0 to 9, A to F key, the password of the changed security level is input.

2 When correcting the input character, touch Del key to delete the correcting character and input the password again.



3 After inputting password, touch the Enter key.
When the password matches, the normal completion message is displayed. When the password does not match, an error message is displayed.

4 If OK button is touched it returns to the password input screen again.

5 If ⊠ button is touched it returns to security setting screen.

Remark

About forgetting to return to the original level after changing security level temporarily

When use GOT after temporarily changing the security level, do not forget to return the security level to the original level.

11.5 Utility call key setting

11.5.1 Utility call key setting function

The key position for calling the main menu of the utility can be specified.
For the key position, 1 or 2 points can be specified from 4 corners on the screen.
When specifying 1 point, a setting to switch the screen to the utility by keeping pressing the key position is available.
This prevents a switching to the utility by an unintentional operation.

The number of key positions that can be set differs depending on the GOT type.

Model name	The number of settable key positions
GT1595-X	1 point
GT1585-S, GT1575-S, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V. GT1565-VN	1 or 2 points

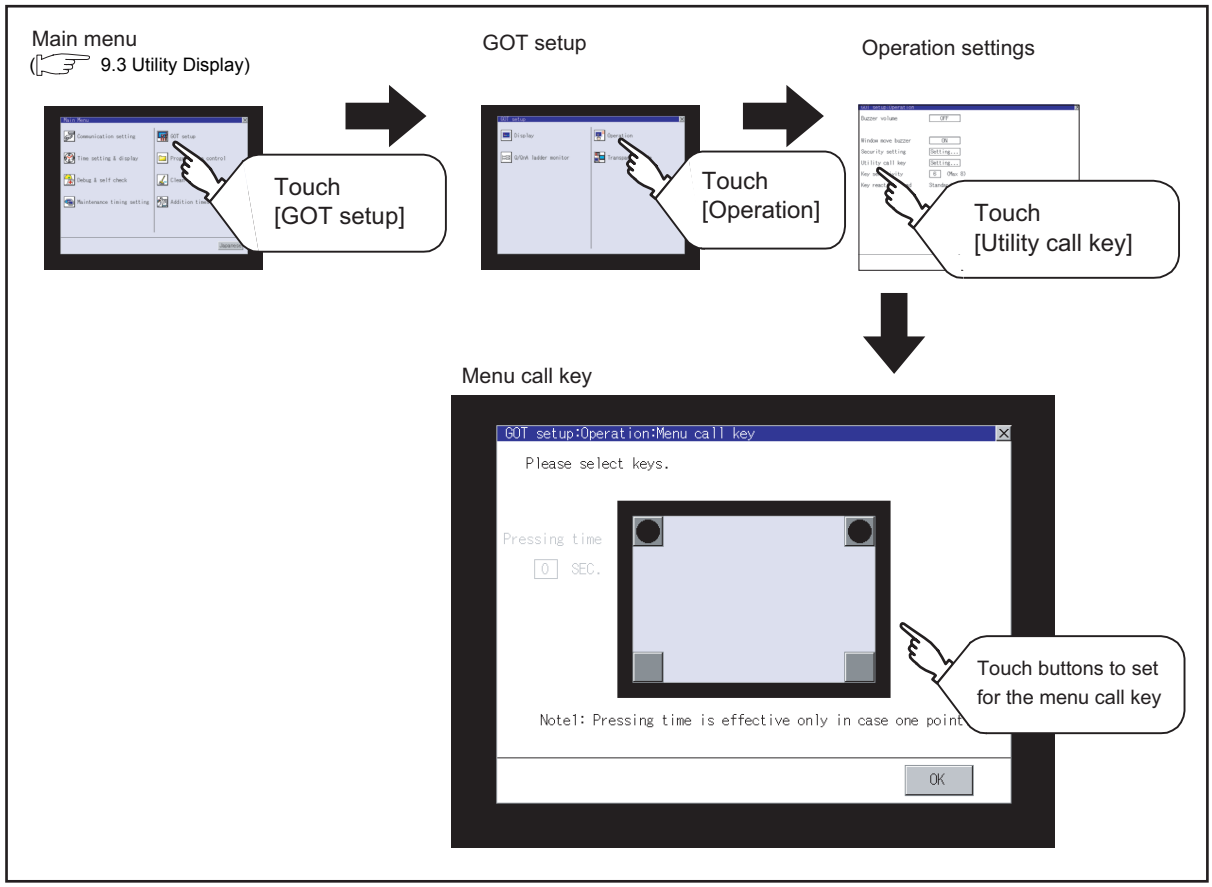
Point

Operation settings by GT Designer2

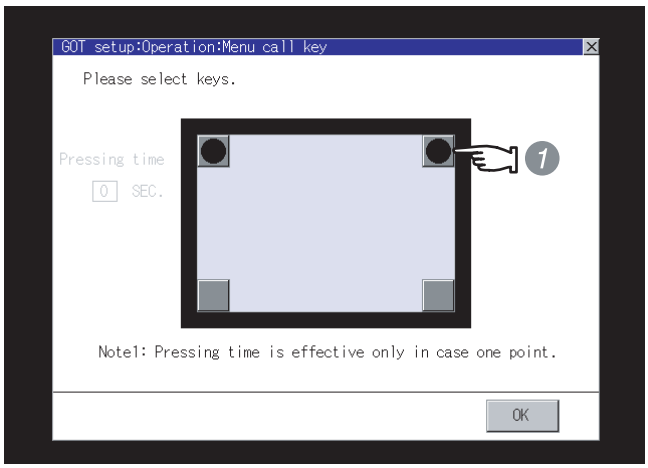
Set the utility call key at [GOT set up] in [System Environment] of GT Designer2.
When change a part of the setting after downloading the project data, change the setting by [Display] screen of the GOT.

☞ GT Designer2 Version ☐ Screen Design Manual
(3.8 Setting of the GOT display and operation (GOT setup))

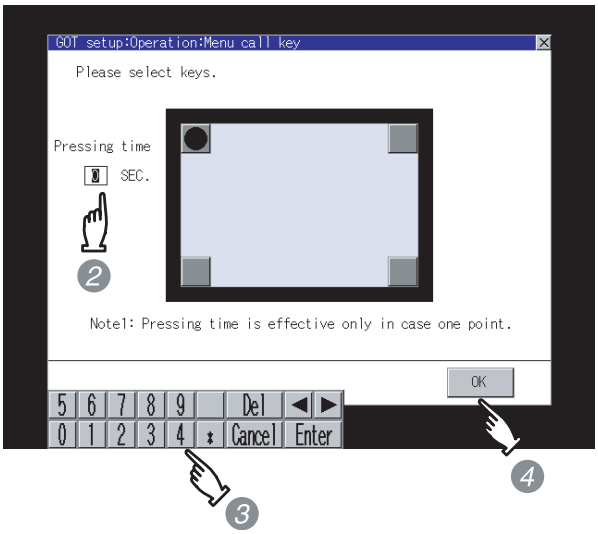
11.5.2 Utility call key display operation



11.5.3 Utility call key setting operation



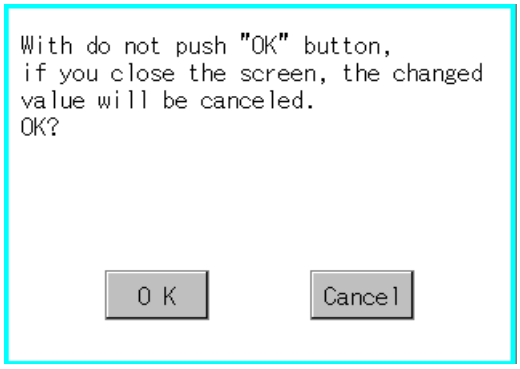
1 Touch ● or □ displayed at the 4 corners of the setting screen.
The button repeats ● ⇄ □ with every touch.
Set the corner to be set to a key position to ●.



2 When setting 1 point, specify time for keeping pressing the key position to switch to the utility.
Touch the time input area.

3 Touching the input area displays a keyboard.
Input numerical value from the keyboard.

4 Touching OK button determines the setting.



5 If touch ☒ button without touching OK button, the dialog mentioned left is displayed.

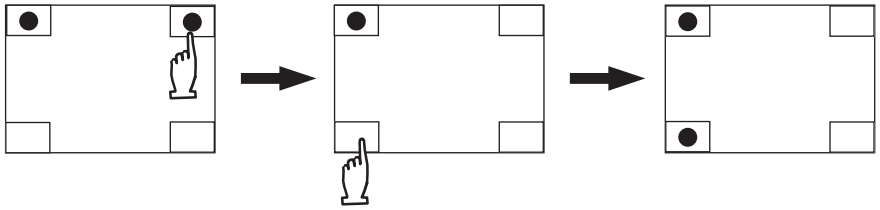
6 If close the display setting and GOT setup screens with ☒ button after completing the setting of all items to change, GOT restarts and reflects the setting contents.

Point

(1) When using GT1595-X
For the key position, 1 point only can be set.

(2) Setting another key position when two ● have been already set
Change either key position from ● to □ before making the setting.
You cannot select three ● at the same time.

Example: Changing the 2 points of the upper left and right corners to those of the upper left and lower left corners.



Change ● at the upper right corner to □.

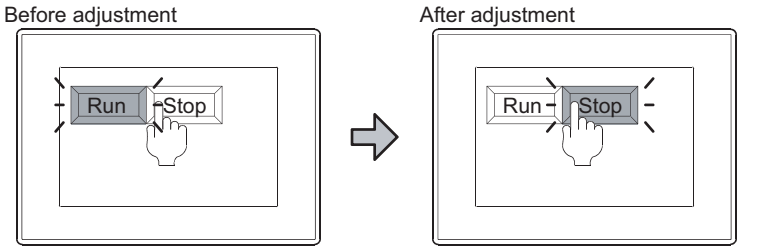
Change □ at the lower left corner to ●.

11.6 Adjusting the Touch Panel Position (Touch panel calibration Setting)

11.6.1 Touch panel calibration setting function

GT1595 -X

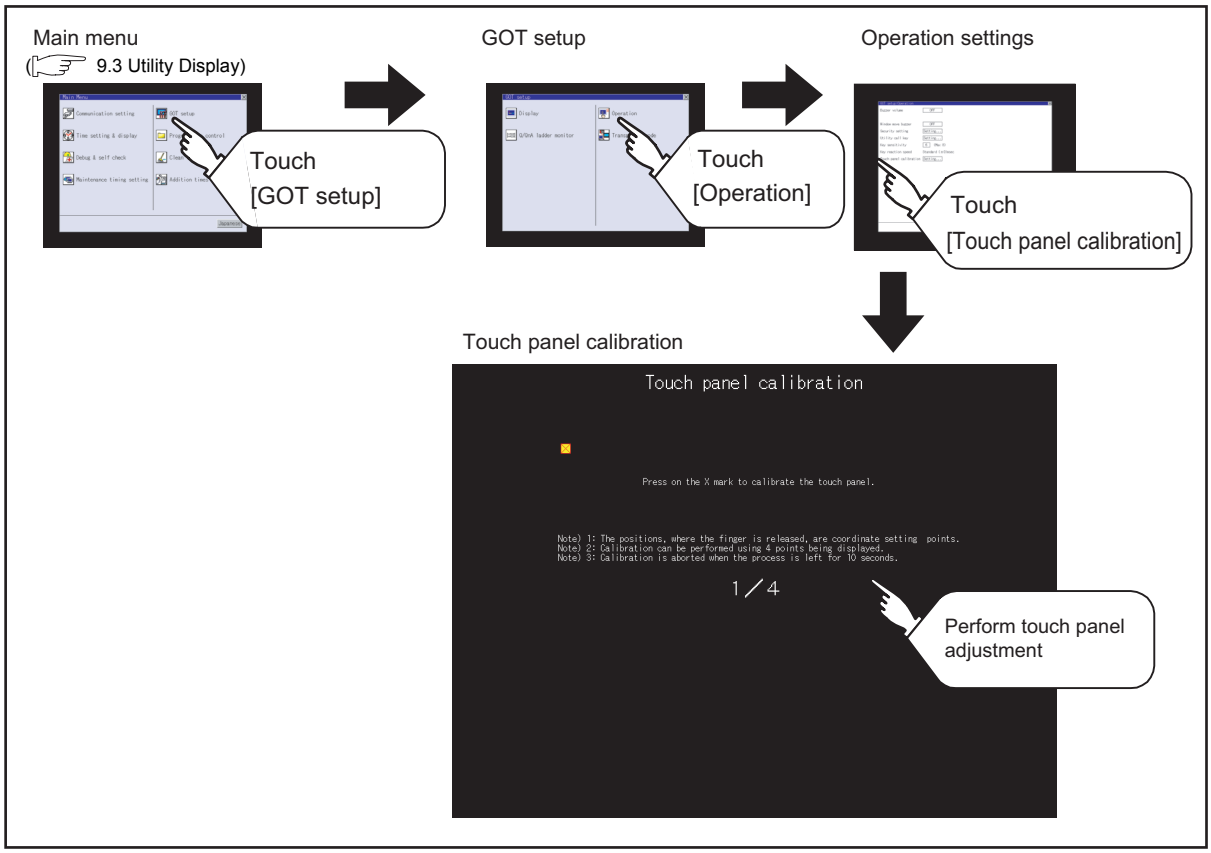
Touch panel reading error can be corrected.
Normally the adjustment is not required, however, the difference between a touched position and the object position may occur as the period of use elapses.
When any difference between a touched position and the object position occurs, correct the position with this function.



The [Run] will operate though you intended to touch the [Stop] button.

The [Stop] button can be touched without fail.

11.6.2 Touch panel calibration setting display operation


Main menu
(9.3 Utility Display)
Touch
[GOT setup]
GOT setup
Touch
[Operation]
Operation settings
Touch
[Touch panel calibration]
Touch panel calibration
Touch panel calibration
Press on the X mark to calibrate the touch panel.
Note) 1: The positions, where the finger is released, are coordinate setting points.
Note) 2: Calibration can be performed using 4 points being displayed.
Note) 3: Calibration is aborted when the process is left for 10 seconds.
1/4
Perform touch panel adjustment

11.6.3 Touch panel calibration operation

Touch the ⊠ point displayed on the screen with the finger one by one to make the setting.

Touch panel calibration
Press on the X mark to calibrate the touch panel.
Note) 1: The positions, where the finger is released, are coordinate setting points.
Note) 2: Calibration can be performed using 4 points being displayed.
Note) 3: Calibration is aborted when the process is left for 10 seconds.
1／4

1 Touch the ⊠ point displayed on the upper left.
Be sure to touch the center of the ⊠ precisely.

Touch panel calibration
Press on the X mark to calibrate the touch panel.
Note) 1: The positions, where the finger is released, are coordinate setting points.
Note) 2: Calibration can be performed using 4 points being displayed.
Note) 3: Calibration is aborted when the process is left for 10 seconds.
2／4

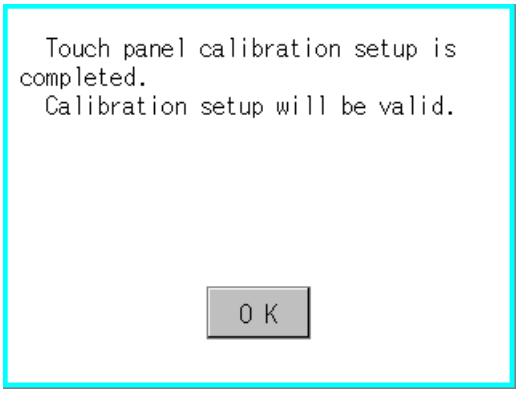
2 Touch the ⊠ point displayed on the upper right.

Touch panel calibration
Press on the X mark to calibrate the touch panel.
Note) 1: The positions, where the finger is released, are coordinate setting points.
Note) 2: Calibration can be performed using 4 points being displayed.
Note) 3: Calibration is aborted when the process is left for 10 seconds.
3／4

3 Touch the ⊠ point displayed on the lower left.

Touch panel calibration
Press on the X mark to calibrate the touch panel.
Note) 1: The positions, where the finger is released, are coordinate setting points.
Note) 2: Calibration can be performed using 4 points being displayed.
Note) 3: Calibration is aborted when the process is left for 10 seconds.
4／4

4 Touch the ⊠ point displayed on the lower right.



5 When the setting is completed, the message shown left is displayed. Touching the OK button returns to the previous screen.

11.7 Q/QnA Ladder Monitor

11.7.1 Q/QnA ladder monitor setting function

The data used for ladder monitor function can be saved.
Saving the ladder data cuts out the need for reading the ladder data from PLC CPU at the next GOT start-up, enabling to start the ladder monitoring earlier.
Refer to the following manual for details of the ladder monitoring function.

☞ GOT1000 Series Extended/Option Functions Manual

Function	Description	Setting range
Data save location	Select the ladder data storage location of the Q/QnA ladder monitor.	C: Flash Memory/A: Standard CF Card/Not store <Default: C: Flash Memory>

Point

Ladder data to be saved

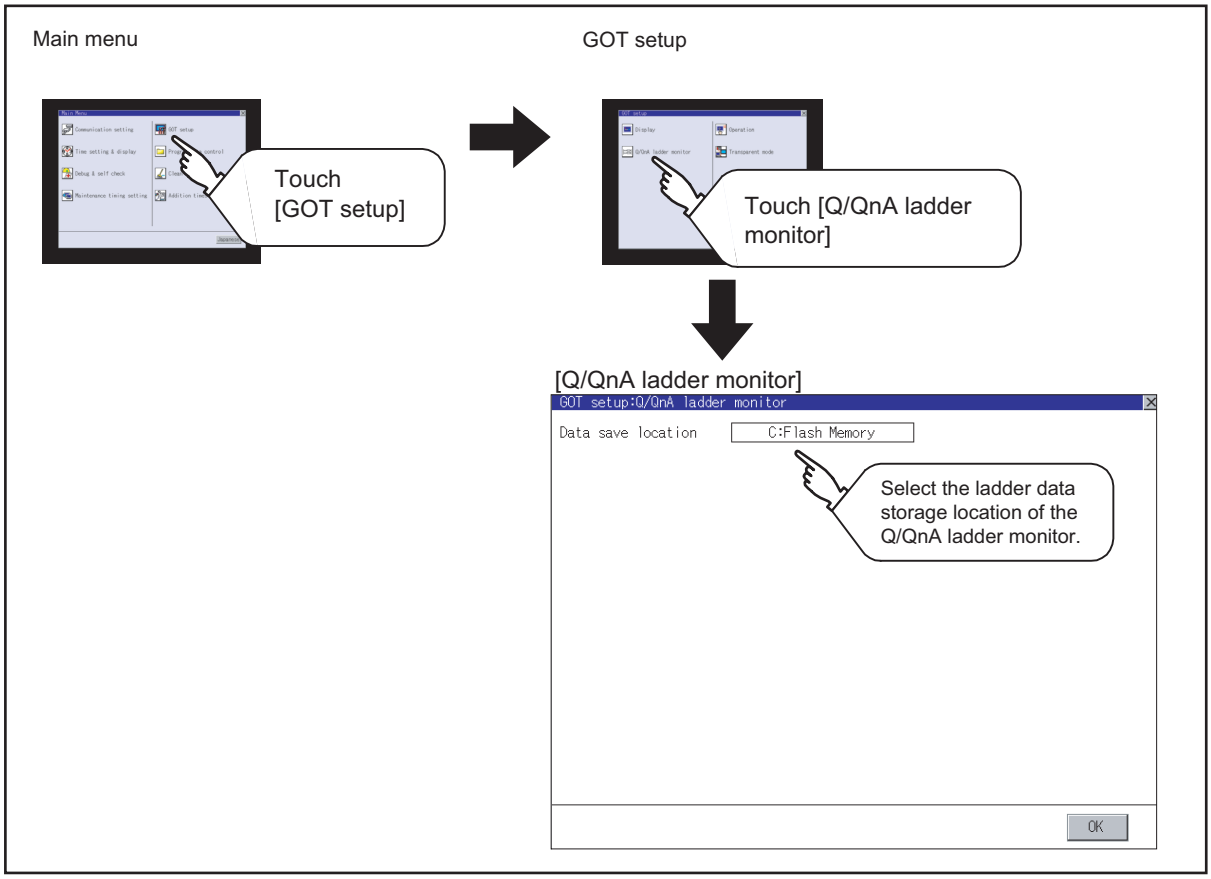
(1) The ladder data to be saved is used by the GOT to execute ladder monitoring. The ladder data can be saved in the CF card with this function, however it cannot be copied in the PC to be referred/edited with GX Developer, etc.
For the name of ladder data to be saved, refer to the following.

☞ 13.1.5 Display file

(2) The ladder data saved in the built-in flash memory and standard CF card (file name: CIRDAT) can be deleted by selecting [Project information] of [Program/ Data control].

☞ 13.3.4 Operation of project information

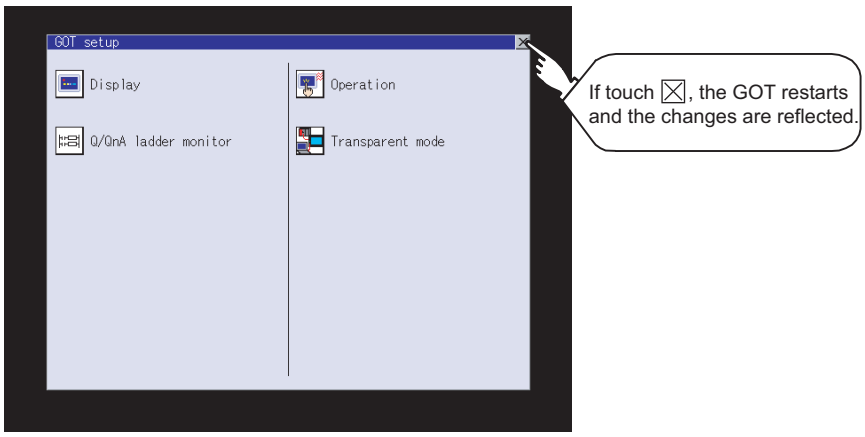
11.7.2 Display operation of display setting



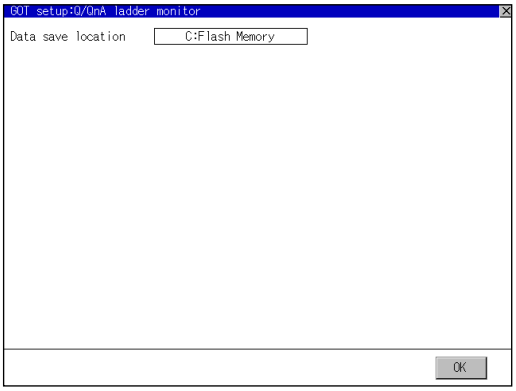
Point

Restart after setting change

If return the display to the GOT setup screen by touching the ☒ button after the setting of each item is changed and touch the ☒ button on the GOT setup screen, the GOT will restart.
After GOT restarts, it is displayed with the changed settings.
If restarted the GOT by powering OFF the GOT without the procedure above, the setting contents are canceled without reflected.



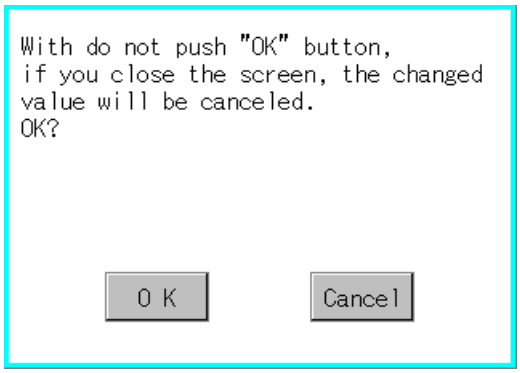
11.7.3 Q/QnA ladder monitor setting operation



1 Setting items are changed if setting item is touched.

C: Flash Memory → A: Standard CF card → Not store → C: Flash Memory

2 By touching the OK button, the setting is reflected.



3 If touch ⊠ button without touching OK button, the dialog mentioned left is displayed.

4 Touching the ⊠ button restarts GOT. After restarting, GOT operates with changed value.

11.8 Transparent Mode (Transparent channel setting)

11.8.1 Transparent function setting function

When using the multi-channel function, the channel No. of a controller to which the FA transparent function is executed can be specified.
For the multi-channel function, refer to the following manual.

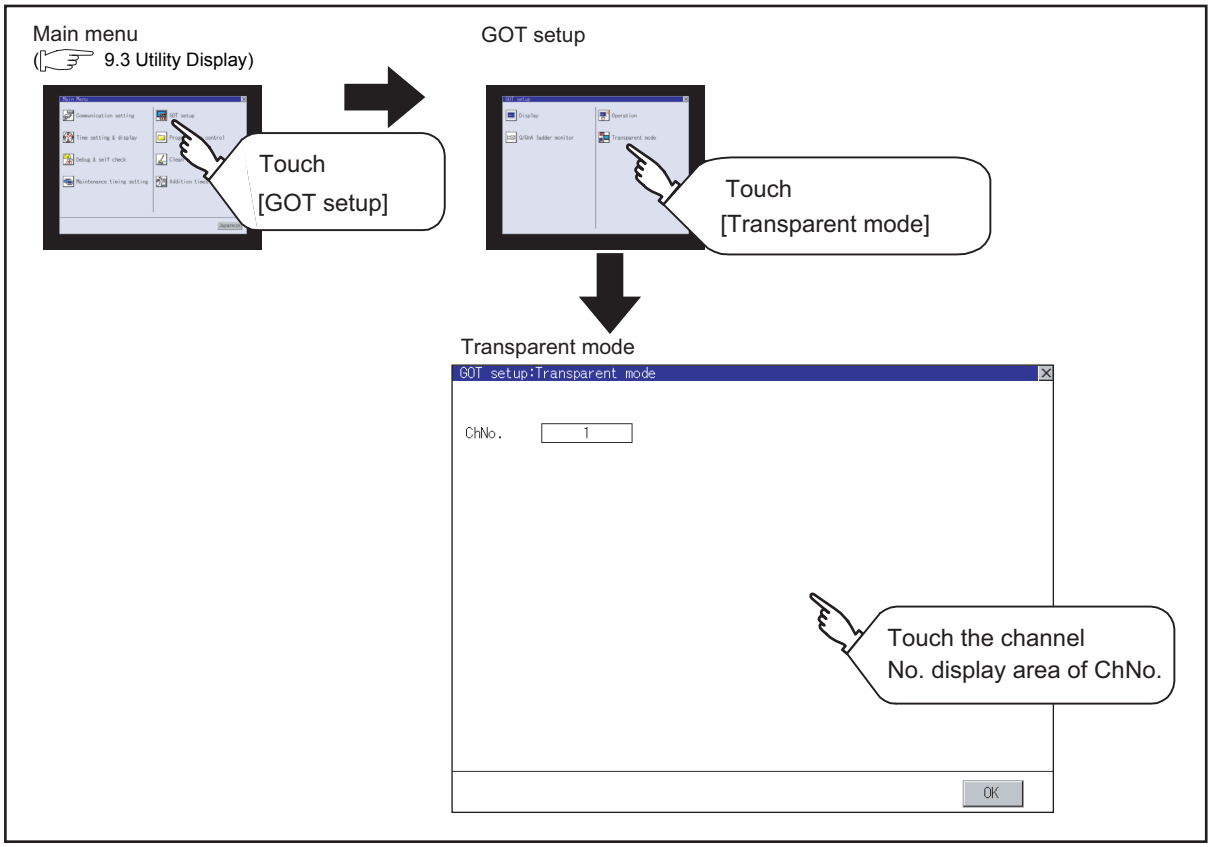
☞ GT Designer2 Version□ Screen Design Manual (2.8 Multi-channel Function)

Also, refer to the following manual for the FA transparent function.

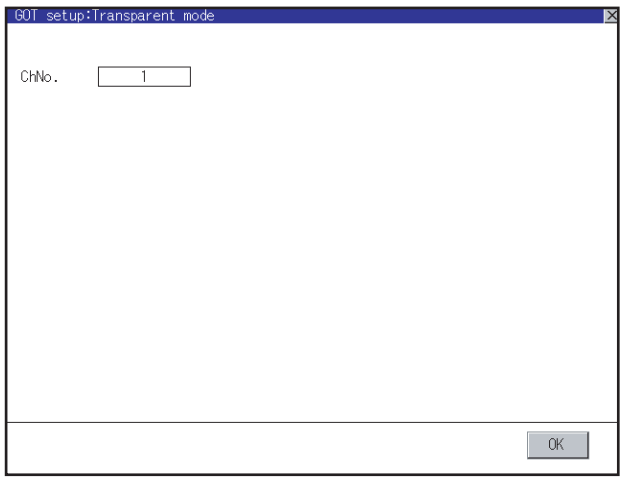
☞ GOT1000 Series Connection Manual (22 FA TRANSPARENT FUNCTION)

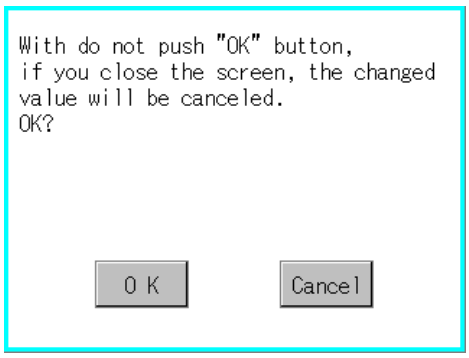
Function	Description	Setting range
ChNo.	The channel No. of a controller to which the FA transparent function is executed can be set.	1/2/3/4 <Default: 1>

11.8.2 Transparent function display operation



11.8.3 Setting operation of transparent function





1 Touching the transparent ChNo. (numerical part) on the left, the keyboard is displayed. Input numerical value by the keyboard.

2 Touching the [OK] button reflects the selected setting.

3 Touching the ☒ button without touching the [OK] button displays the dialog mentioned left is displayed.

4 If close the display setting and GOT setup screens with ☒ button after completing the setting of all items to change, GOT restarts and reflects the setting contents.

12. CLOCK SETTINGS AND BATTERY STATUS DISPLAY (TIME SETTING AND DISPLAY)

The clock display setting items and the time when displayed the setting screen are displayed.
(While displaying clock and the seting screen, the display time does not change.)
The voltage status of the built-in battery is also displayed.

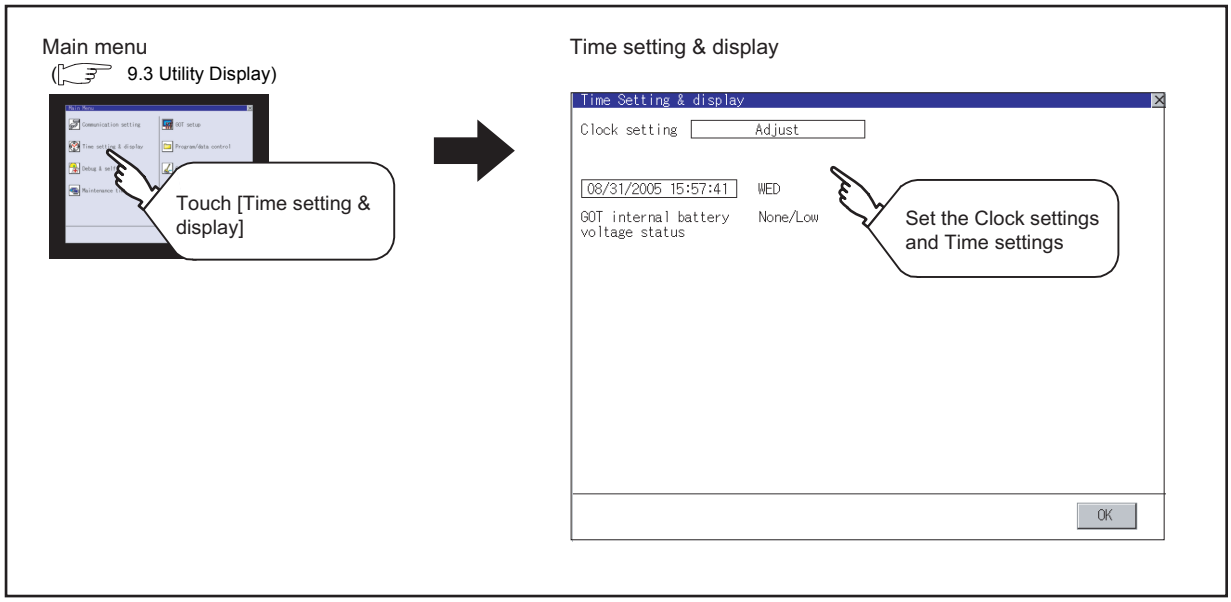
12.1 Time Setting and Display

12.1.1 Time setting and display functions

Time settings and displaying of the status of GOT built-in battery are possible.

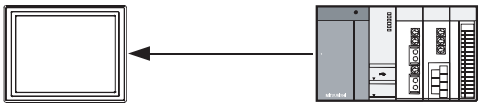
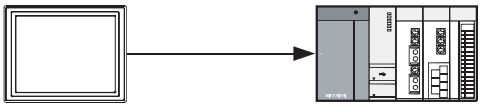
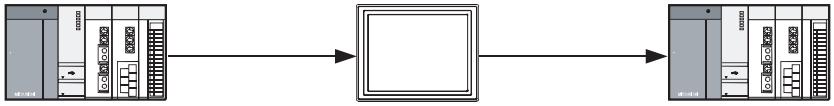
Function	Description	Reference page
Clock setting	Setup the method to adjust the time between GOT clock data and clock data of controller connected to the GOT.	12-2
Clock display	Carry out the display and setup of GOT clock data.	12-4
GOT internal battery voltage status	Displays GOT internal battery voltage status.	12-5

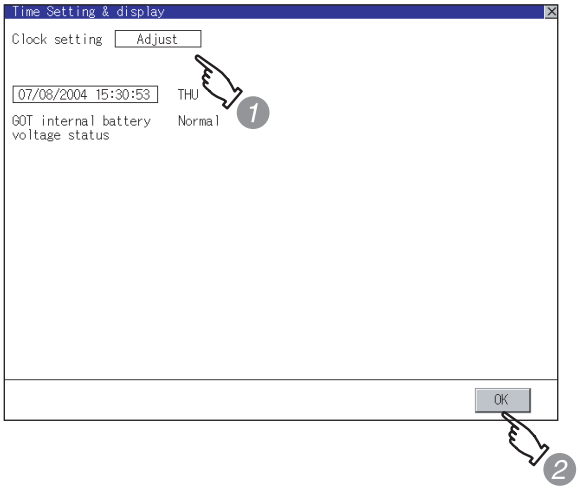
12.1.2 Display operation of clock display and setting



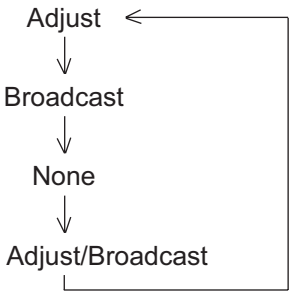
1 Clock setting

Setup the method to adjust the time between GOT data and the clock data of controller connected to the GOT.

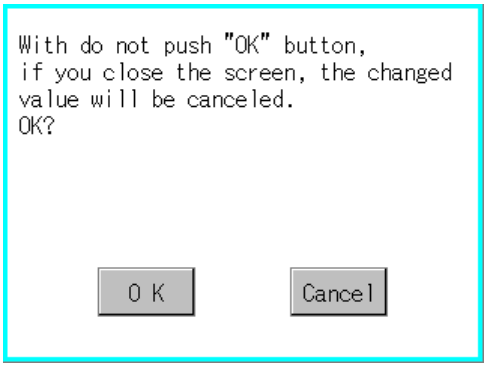
Setting	Description
Adjust	Adjust the time of GOT clock data to the clock data of controller.  Same as setting in [GOT setup] in [System Environment] of GT Designer2. GT Designer2 Version □ Screen Design Manual (2.5 Clock Function)
Broadcast	Adjust the time of controller clock data to the clock data of GOT.  Same as setting in [GOT setup] in [System Environment] of GT Designer2. GT Designer2 Version □ Screen Design Manual (2.5 Clock Function)
None	No adjustment of clock data.
Adjust/Broadcast	Adjust the GOT and controllers to the controller whose clock data is used as a base.  It is same as set in the GOT setup in System Environment of the GT Designer2. GT Designer2 Version□ Screen Design Manual (2.5 Clock Function)



1 If touch the setup item, the setup contents is changed.



2 If touch OK button, the setup contents is reflected.



3 If touch ☒ button without touching OK button, the dialog mentioned left is displayed.

4 If touch ☒ button, GOT restarts. After restart, GOT operates with the changed settings.

Point

(1) When connecting to an external device which does not have clock function
If set to [Adjust] or [Broadcast] for clock setting while the GOT is connected to external devices (PLC or microcomputers) which do not have clock function, the clock data will not be adjusted.
Refer to the following for the list of PLC installed with clock function.

☞ GT Designer2 Version□ Screen Design Manual
(2.4.3 PLC CPUs with clock function)

(2) Clock setting when using the multi-channel function
The channel No. of a controller whose clock is used as a base or adjusted cannot be set by the utility.
The controller whose clock is used as a base or adjusted can be set by GT Designer2.
For channel settings, refer to the following.

☞ GT Designer2 Version□ Screen Design Manual
(2.5.1 Synchronizing clock data between GOT and PLC CPU)

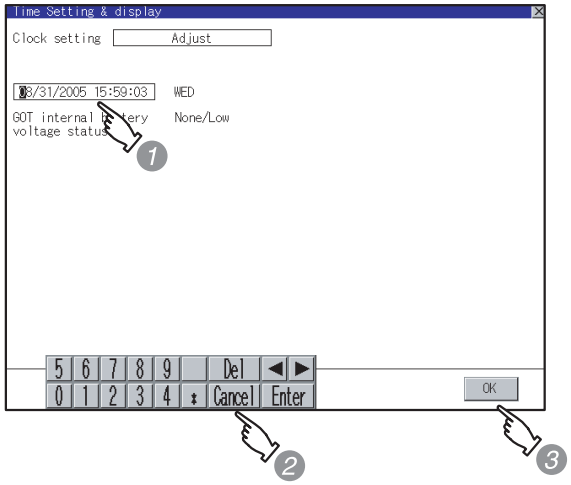
(3) Setting of clock setting and battery
The battery is not installed in GOT at purchase. When select [Broadcast] or [None] in clock setting, set the clock of the GOT once with installing the optional battery to the GOT.

(4) Operation setting by GT Designer2
Carry out the setting of clock setting in [GOT set up] in [System Environment] of GT Designer2.
To change a part of the setting after downloading the project data, change the setting at the display setting of GOT.

☞ GT Designer2 Version□ Screen Design Manual
(3.8 Setting of GOT Display and Operation (GOT Setup))

2 Clock display

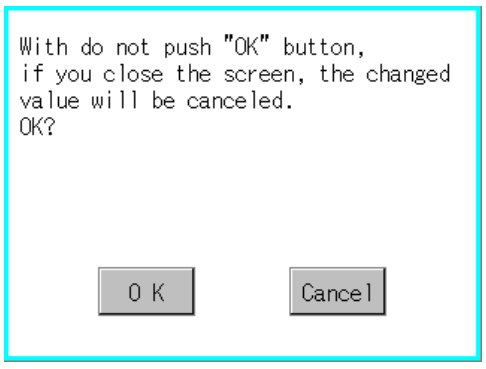
Carry out the display and seting of GOT clock data.
The setup methods of clock data are shown below.



1 If touch the clock display section, the keyboard for input is displayed and the clock update stops.

2 Input time with the keyboard by referring to the table below. Input the scheduled time when the operation of 3 is to be carried out since the input time is reflected at the time of the operation of 3.
The day of the week is displayed automatically according to the input date.

Key	Description
0 to 9 Key	Input numeric value in cursor position.
◀ / ▶ Key	Move the cursor.
Del Key	Move the cursor to the left by one character when Del Key is touched while inputting year, month, day, time, minutes, seconds. Carry out nothing when touched other than when inputting the above.
Enter Key	Close the keyboard after the input time is displayed in clock display. The update of the clock display does not restart even if the keyboard is closed. The update of the clock display restarts with the operation of 3.
Cancel Key	Cancel the input time and returns the time of clock display to the time at which the keyboard was displayed and close the keyboard. The update of the clock display does not restart even if the keyboard is closed. The update of the clock display restarts with the operation of 3.



3 If touch OK button, the setting contents are reflected and the clock display update re-starts.

4 If touch ☒ button, the GOT restarts if the clock settings is changed, or the screen closes if clock settings is not changed.
If touch ☒ button without touching OK button, the dialog shown left is displayed and the changed contents are cancelled and the screen is closed.

3 GOT internal battery voltage status

Displays battery voltage status.

Display	Status
Normal	Normal
Low/None	Low voltage

When the battery voltage is low, replace the battery immediately.
Refer to the following for battery replacement procedure.

☞ 8.7 Battery

13. FILE DISPLAY AND COPY (PROGRAM/DATA CONTROL)

OS, project data (screen data) or alarm data which is written in the GOT or memory card can be displayed and data can be transferred between GOT and memory card.
The format of the memory card is also possible.

13.1 Data Storage Location

13.1.1 Drive name allocation

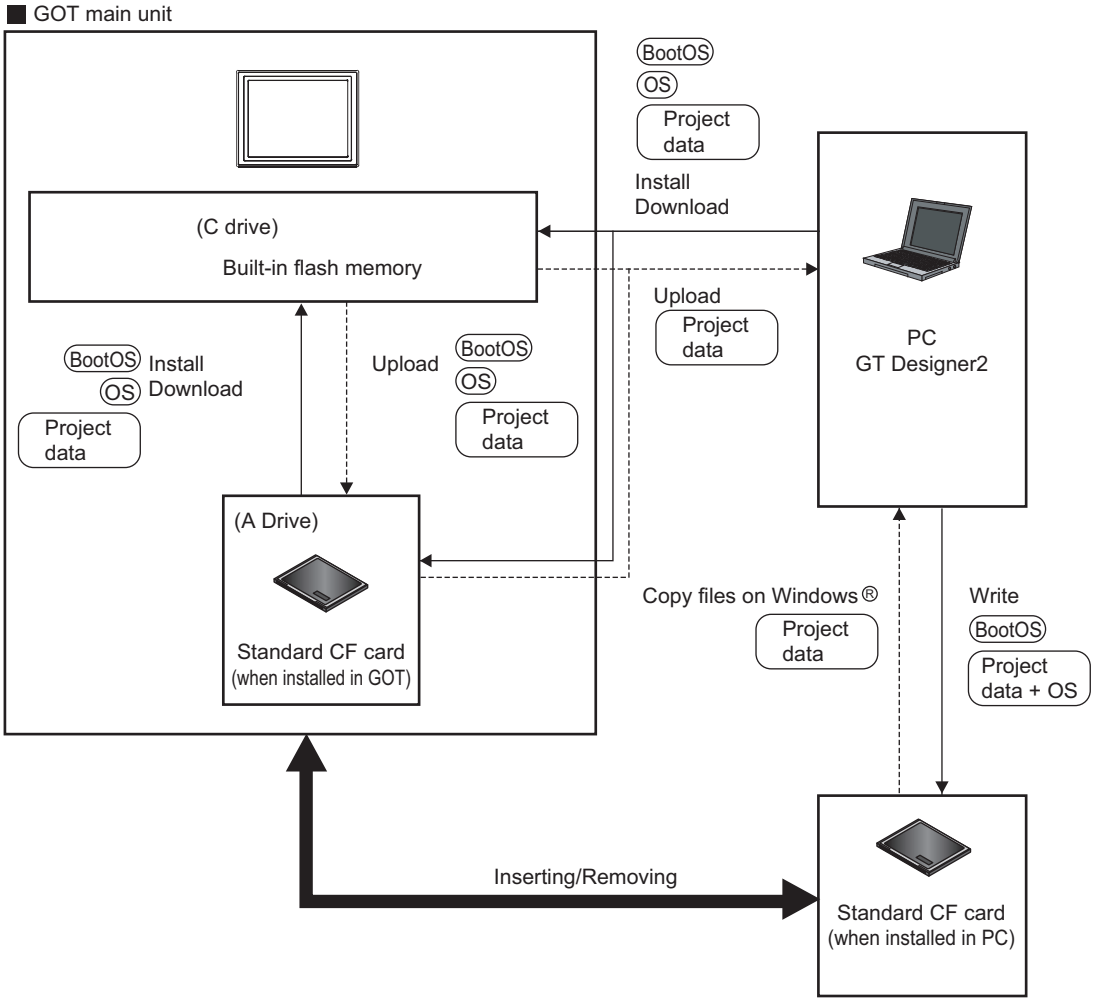
For the GOT built in flash memory or standard CF card, the following drive names (A drive and C drive) are allocated.

Drive name	Allocation
A drive	Standard CF card
C drive	Built in flash memory

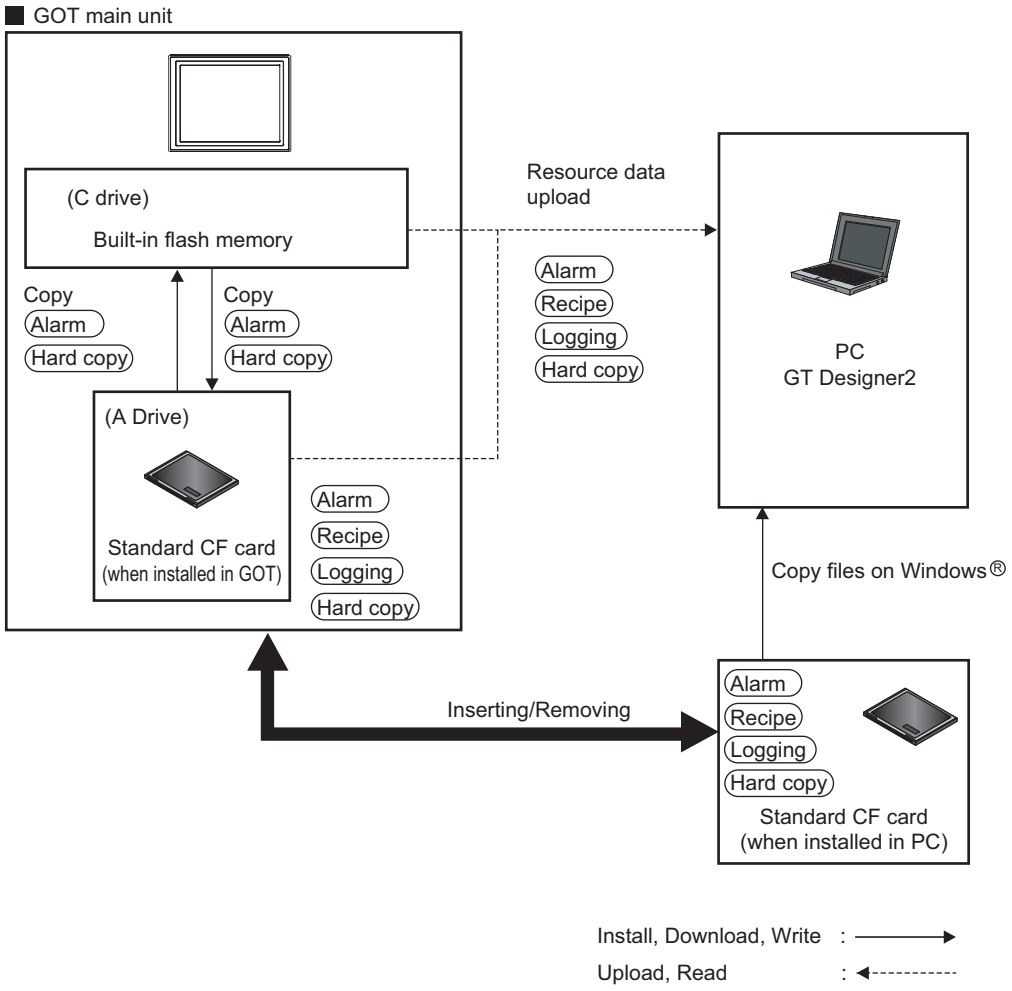
13.1.2 Data type and the storage location

1 System

The data storage location and transferring (write/read) route for each data type are shown below.



2 At maintenance



The data of the build in flash memory (Project data, etc.) can be saved even if the battery voltage becomes low.

Item	Data type	Storage location
BootOS	BootOS	Built in flash memory (C drive)
OS	Standard monitor OS	
	PLC communication driver	
	Extended function OS	
	Option OS	
Project data	Project data (Including recipe setting, alarm conditions, time action, and GOT setup.)	Standard CF card (A drive) orbuilt in flash memory (C drive) *1
Alarm	Alarm data (Extended alarm log file and alarm log file)	Standard CF card (A drive)
Recipe	Recipe data (Advanced recipe file, Recipe file)	
Logging	Logging (Logging file)	
Hard copy	Image file (Hard copy function)	

*1 When use the project data stored in the standard CF card (A drive) with GOT, use the project data with the CF card installed to GOT.

13.1.3 OS version confirmation

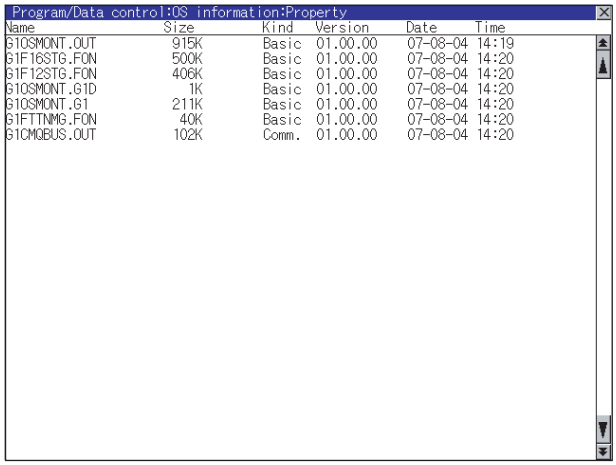
Confirm the OS version carefully when install BootOS and standard monitor OS.
When OS is installed, GOT checks and compares the OS version automatically.

(1) When install BootOS
When the BootOS to be installed has the older major version, GOT displays the installation disapproving message to cancel the installtion so that the older version may not be written.
(Even when the version of the BootOS to be installed has the same or later version, the version information and the dialog for selecting continue/not continue will be displayed.)
When installing from the standard CF card, the dialog is displayed by the main unit.
When installing from GT Designer2 via USB or RS-232, the dialog is displayed by the GT Designer2.

(2) When install standard monitor OS, communication driver, option OS
When standard monitor OS, communication driver, or option OS has already been installed, the version information of the OS which has been installed and the dialog for selecting continue/not continue will be displayed.
Moreover, when the different versions will coexist amoung all OSs (standard monitor OS, communication driver, and option OS) by installing OS, the installation disapproving dialog will be displayed and the installation process is canceled.

(3) When download project data
GOT automatically compares the version between the project data to be downloaded and the installed OS.
When the versions are different, the dialog confirming whether to install the OS together is displayed.
When downloading the project data from the memory card, storing the project data and OS beforehand is recommended.

The version of each OS installed in the GOT can be confirmed by [Property] of [OS information] screen.


Program/Data control:OS information:Property
Name Size Kind Version Date Time
G1OSMONT.OUT 915K Basic 01.00.00 07-08-04 14:19
G1F16STG.FON 500K Basic 01.00.00 07-08-04 14:20
G1F12STG.FON 406K Basic 01.00.00 07-08-04 14:20
G1OSMONT.G1D 1K Basic 01.00.00 07-08-04 14:20
G1OSMONT.G1 211K Basic 01.00.00 07-08-04 14:20
G1FTTNMG.FON 40K Basic 01.00.00 07-08-04 14:20
G1CMQBUS.OUT 102K Comm. 01.00.00 07-08-04 14:20

Explanation of OS version
01.00.00A
BootOS version
Appears only when the property of the BootOS is displayed.
Minor version
Major version

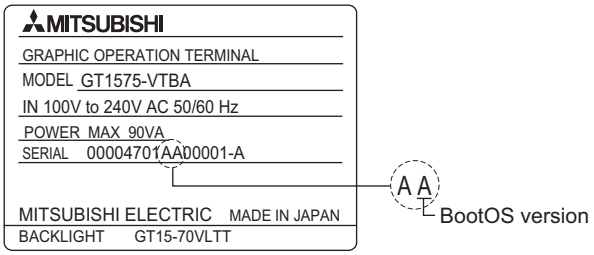
Refer to the following for details of the screen display operation.

☞ 13.2 OS Information

Point

Version confirmation of BootOS by rating plate

Confirm the version of BootOS installed in the GOT at product shipment by rating plate of GOT rear face.



13.1.4 Capacity confirmation of the project data downloading location

When download the project data, confirm the capacity of the user area in the drive to which transferred, the transferred project data size, the transfer size and buffering area size of the optional function OS in advance to judge whether to carry out the download.
The capacities can be confirmed by GT Designer2.
Refer to the following for details.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(8.1.2 Drive capacity required for data transfer)

13.1.5 Display file

Each data stored in GOT is displayed with the following file name.
The following table shows the description of each file and storage destination of data.

Display screen	File name	Description		Storage location (Drive name and file name)
OS Information screen	G1OSBTOS.OUT	BootOS	—	Standard CF card A:\G1BOOT\ *2 Or Built in flash memory C:\G1BOOT\ *2
	G1OSMONT.G1	Standard monitor OS system screen data	Standard Function	Standard CF card A:\G1SYS\ *2 Or Built in flash memory C:\G1SYS\ *2
	G1OSMONT.G1D	Standard monitor OS system screen management information file		
	G1OSMONT.OUT	Standard monitor OS (monitor function)		
		Use 6x8dot font (ASCII character)		
		24-dot numerical HQ font		
		32-dot numerical HQ font		
	G1FTTNMG.FON	True Type numerical font		
	G1F12STG.FON	12-dot standard font (Gothic)		
	G1F16STM.FON	16-dot standard font (Mincho)		
	G1F16STG.FON	16-dot standard font (Gothic)		
	G1OSSYSM.OUT	System monitor function	Extended Funtion	
	G1OSSYSM.G1D	System monitor management information file		
	G1OSSYSM.G1	System monitor screen data		
	G1OSBCD.OUT	Bar code function		
	G1OSFEP.OUT	Kana-kanji conversion function	Option Function	
	G1F12GBM.FON	12-dot standard font (China (GB))		
	G1F16GBM.FON	16-dot standard font (China (GB))		
	G1F12BGG.FON	12-dot standard font (China (Big5))		
	G1F16BGG.FON	16-dot standard font (China (Big5))		
	G1OSLOG.OUT	Logging function		
	G1OSLOG.G1D	Logging function management information file		
	G1OSLOG.G1	Logging function screen data		
	G1OSRECP.OUT	Recipe		
	G1OSARCP.OUT	Advanced recipe function		
	G1OSARCP.G1D	Advanced recipe function management information file		
	G1OSARCP.G1	Advanced recipe function screen data		
	G1OSSCR.OUT	Object script function		
	G1OSGWYM.OUT	Gateway function (Mail)		
	G1OSGWYE.OUT	Gateway function (Server, client)		
	G1OSGWYF.OUT	Gateway function (FTP function)		
	G1OSACIR.OUT	MELSEC-A ladder monitor function		
	G1OSACIR.G1D	MELSEC-A ladder monitor function management information file		
	G1OSACIR.G1	MELSEC-A ladder monitor function screen data		
	G1OSFCIR.OUT	MELSEC-FX ladder monitor function		
	G1OSFCIR.G1D	MELSEC-FX ladder monitor function management information file		
	G1OSFCIR.G1	MELSEC-FX ladder monitor function screen data		
	G1OSQCIR.OUT	MELSEC-Q/QnA ladder monitor function		
	G1OSQCIR.G1D	MELSEC-Q/QnA ladder monitor function management information file		
	G1OSQCIR.G1	MELSEC-Q/QnA ladder monitor function screen data		
	G1OSSPM.OUT	Intelligent module monitor function		
	G1OSSPM.G1D	Intelligent module monitor function management information file		
	G1OSSPM.G1	Intelligent module monitor function screen data		
	G1OSNETM.OUT	Network monitor function		
	G1OSNETM.G1D	Network monitor function management information file		
	G1OSNETM.G1	Network monitor function screen data		
	G1OSALST.OUT	MELSEC-A list editor function		
	G1OSALST.G1D	MELSEC-A list editor function management information file		
	G1OSALST.G1	MELSEC-A list editor function screen data		

(Continued to next page)

Display screen	File name	Description			Storage location (Drive name and file name)
OS Information screen	G1OSFLST.OUT	MELSEC-FX list editor function		Option Function	Standard CF card A:\G1SYS\ *2 Or Built in flash memory C:\G1SYS\ *2
	G1OSFLST.G1D	MELSEC-FX list editor function management information file			
	G1OSFLST.G1	MELSEC-FX list editor function screen data			
	G1OSMTM.OUT	Q motion monitor function			
	G1OSMTM.G1D	Q motion monitor function management information file			
	G1OSMTM.G1	Q motion monitor function screen data			
	G1OSSVM.OUT	Servo amplifier monitor function			
	G1OSSVM.G1D	Servo amplifier monitor function management information file			
	G1OSSVM.G1	Servo amplifier monitor function screen data			
	G1OSCNCM.OUT	CNC monitor function			
	G1OSCNCM.G1D	CNC monitor function management information file			
	G1OSCNCM.G1	CNC monitor function screen data			
	G1SPMONT.G1D	Special data management information			
	G1SPMONT.G1	Special data screen			
	G1CMQBUS.OUT	Bus connection Q		Communication Driver	
	G1CMABUS.OUT	Bus connection A/QnA			
	G1CMC24.OUT	AJ71C24/UC24			
	G1CMQC24.OUT	AJ71QC24			
	G1CMAQDR.OUT	A/QnA/QCPU, QJ71C24			
	G1CMFX.OUT	MELSEC-FX			
	G1CMNET1.OUT	MELSECNET/10			
	G1CMCCID.OUT	CC-Link (ID)			
	G1CMCCG4.OUT	CC-Link (G4)			
	G1CME71.OUT	E71 connection			
	G1CMSMC.OUT	OMRON SYSMAC			
	G1CMKEY.OUT	KEYENCE KV-700/1000			
	G1CMJW.OUT	SHARP JW			
	G1CMPSCT.OUT	TOSHIBA PROSEC T/V			
	G1CMHDCH.OUT	HITACHI HIDIC H			
	G1CMHDC2.OUT	HITACHI HIDIC H2			
	G1CMMWNT.OUT	MATSUSHITA MEWNET-FP			
	G1CMYGL.OUT	YASKAWA GL			
	G1CMYGFA.OUT	YOKOGAWA FA500/FA-M3			
	G1CMRWSL.OUT	AB SLC500, AB 1:N			
	G1CMRWML.OUT	AB MicroLogix			
	G1CMSS7.OUT	SIEMENS S7-300/400			
	G1CMSS72.OUT	SIEMENS S7-200			
	G1CMMICR.OUT	Microcomputer connection			
	G1CMNEO.OUT	OMRON THERMAC/INPANEL NEO			
	G1CMYTK.OUT	YAMATAKE SDC/DMC			
	G1CMRKC.OUT	RKC SR Mini HG (MODBUS)			
	G1CMFQRL.OUT	FREQROL 500/700			
	G1CMMSV2.OUT	MELERVO-J3, J2S/M			
Project information screen	PROJECT.G1*3	Project data		Project Data	Standard CF card A:\PROJECT 1\ *2 *3 Or Built in flash memory C:\PROJECT 1\ *2 *3
			User screen data		
			Comment data		
			12-dot HQ font (Mincho)		
			12-dot HQ font (Gothic)		
			16-dot HQ font (Mincho)		
			16-dot HQ font (Gothic)		
			TrueType (Mincho)		
			TrueType (Gothic)		

(Continued to next page)

Display screen	File name	Description		Storage location (Drive name and file name)
Alarm information screen	AAM####.CSV *1	Extended alarm log file CSV file	Resource Data	Standard CF card A:\The folder name and file name can be specified voluntarily by GT Designer2. *2
	AAM####.TXT *1	Extended alarm log file TXT file		
	AAM####.G1A *1	Extended alarm log file Binary file		
	ALARMHST.CSV	Alarm log file CSV file		
Hard copy information screen	SNAP####.BMP *1	Hard copy file BMP file		
	SNAP####.JPG *1	Hard copy file JPG file		
Advanced recipe information screen	ARP#####.CSV *1	Advanced recipe file CSV file		
	ARP#####.TXT *1	Advanced recipe file TXT file		
	ARP#####.G1P *1	Advanced recipe file Binary file		

*1 Sequential number is assigned to #### automatically.

*2 The folder is created automatically at installation, download and upload of each folder.

*3 The folder name and file name can be set at [System Setting] in [System Environment] of GT Designer2.

☞ GT Designer2 Version□ Screen Design Manual (3.1 GOT/PLC Type Setting)

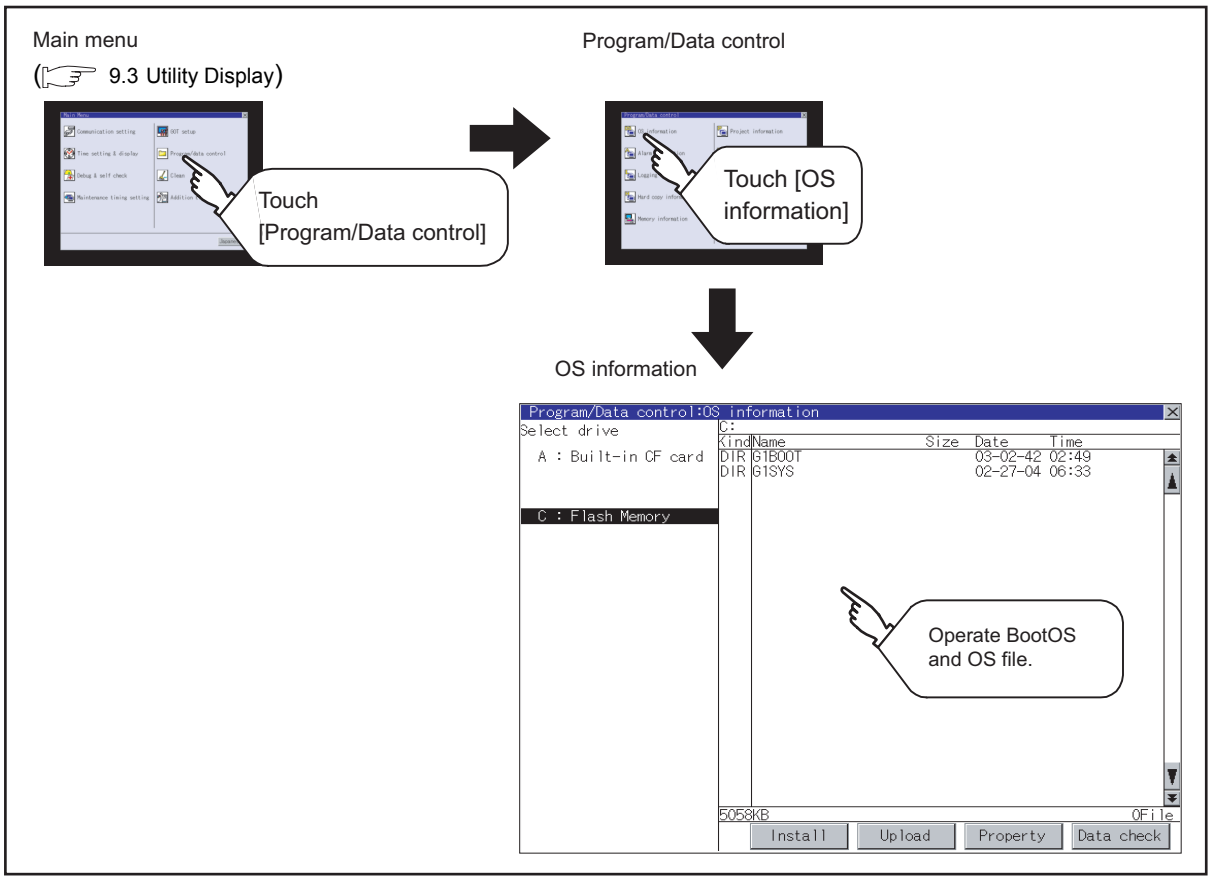
13.2 OS Information

13.2.1 Function of OS information

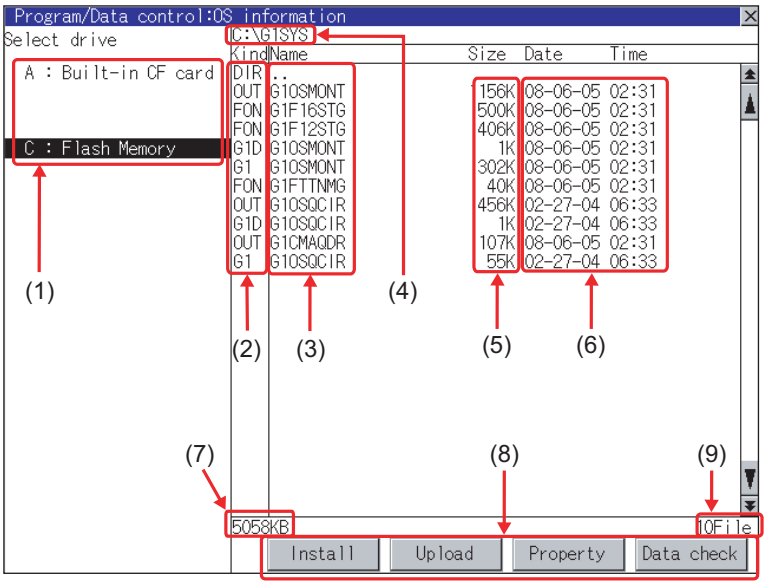
Each file name/folder name of BootOS and OS (Standard monitor OS, communication driver and optional function OS) by which each drive (A: Standard CF card, C: Built-in flash memory) holds can be displayed in lists.
Installation and uploading of the files are also possible.

Function	Description	Reference page
Information display of files and folders	Displays the kind, name, data size, creation date and time of the file or folder.	13-11, 13-12
Install	All files written in the A drive (Standard CF card) can be installed in the C drive (Built in flash memory).	13-13
Upload	All files in the C drive (Built in flash memory) can be uploaded to the A drive (Standard CF card).	13-14
Property display	Displays the property (file name, data size, type, version and creation date) of the file.	13-15
Data check	Data check of files is possible.	13-16

13.2.2 Display operation of OS information



13.2.3 Display example of OS information



Number	Item	Description
(1)	Select drive	The target drive which displays file or folder can be selected. When the CF card is not installed, [A: Built-in CF Card] is not displayed.
(2)	Kind	Indicates whether the displayed name is for file or folder. In case of file, displays the extension; in case of folder, displays "DIR".
(3)	Name	The file name or folder name which is stored in the selected drive or folder is displayed. When the file name or folder name exceeds 20 characters, the exceeding characters (the 21th character or after) are not displayed.
(4)	Path name	The path name of the currently displayed drive/folder is displayed.
(5)	Size	Displays the size of the file displayed in Name.
(6)	Date and time	The date and time when each file was created are displayed.
(7)	The size of drive	Displays the size in use and the entire size of the drive which is selected by drive selection.(Only the size in use is displayed when selecting the C drive.)
(8)	Operation switch	Execution switch of each function.
(9)	Number of folders and files	Displays the total number of the displayed files and folders.

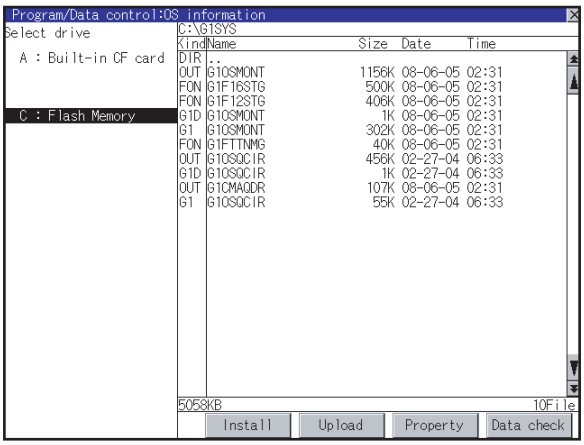
Remark Displayed folders and files

Refer to the following for the details of displayed folders and files.

☞ 13.1.5 Display file

13.2.4 Operation of OS information

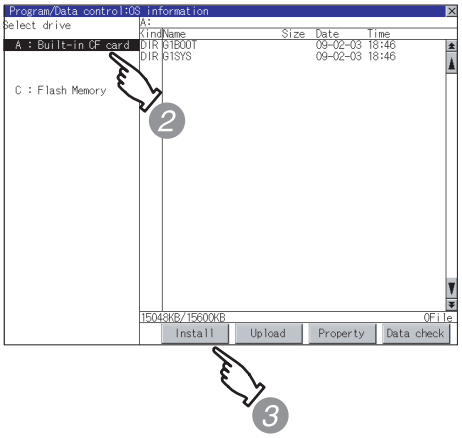
1 Display operation of OS information

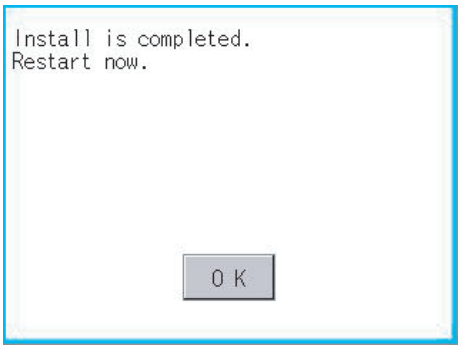


1. If touch a drive in [Select drive], the information of the first folder of the touched drive is displayed.
2. If touch a folder name, the information of the touched folder is displayed.
3. If touch a folder name of ". .", the information of the folder in one higher hierarchy is displayed.
4. If touch ▲ ▼ button of the scrollbar, the screen scrolls up/down by one line.
   If touch ⏫ ⏬ button, the screen scrolls up/down by one screen.
5. If touch a file name, the touched file name is selected and inverted.
6. Refer to the following for operation of installation, upload, property, data check.
   - Installation ..... ☞ this section 2
   - Upload ..... ☞ this section 3
   - Property ..... ☞ this section 4
   - Data check ..... ☞ this section 5
7. Touching ☒ button closes the screen.

2 Installation operation

BootOS and OS which are written in the A drive (Standard CF card) can be installed in GOT.





1 Install the CF card to which the BootOS or OS to install is written to the GOT.
Refer to the following for inserting/removing method of CF card.
☞ 8.1 CF Card

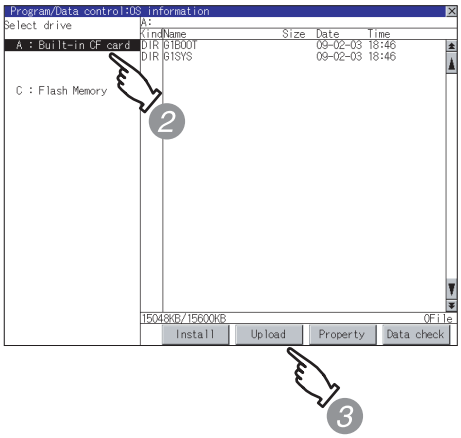
2 Touch [A: Built-in CF Card] for drive selection.

3 Touching Install button starts the install.

4 When the installation is completed, the dialog shown left is displayed.
GOT restarts if touch OK button.

3 Upload operation

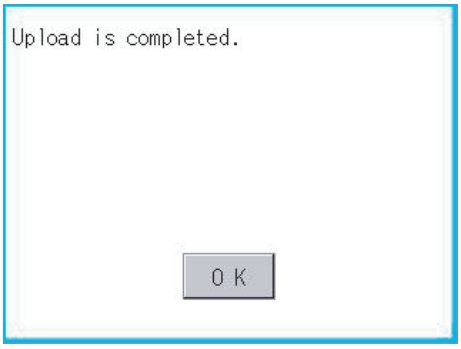
BootOS and OS in the C drive (Built in flash memory) can be uploaded to the A drive (Standard CF card).



1 Install the CF card used as the uploading destination to GOT.Refer to the following for inserting/removing method of CF card.
☞ 8.1 CF Card

2 Touch [A: Built-in CF Card] of [Select drive].

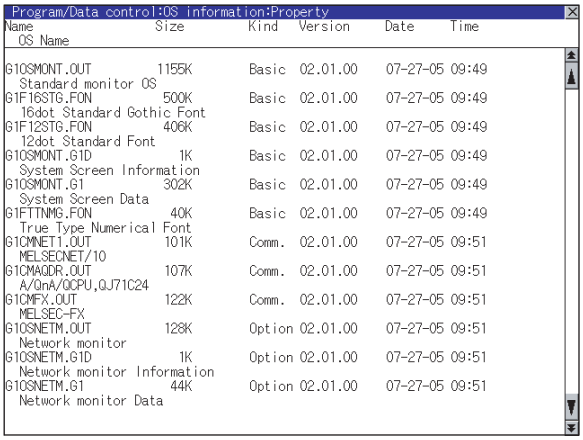
3 Touching Upload starts the uploading.



4 When the upload is completed, the dialog shown left is displayed.
Touching OK closes the dialog.

4 Property display operation

Displays the property of the file stored in the selected folder.


Program/Data control:OS information:Property
Name Size Kind Version Date Time
OS Name
G1OSMONT.OUT 1155K Basic 02.01.00 07-27-05 09:49
Standard monitor OS
G1F16STG.F0N 500K Basic 02.01.00 07-27-05 09:49
16dot Standard Gothic Font
G1F12STG.F0N 406K Basic 02.01.00 07-27-05 09:49
12dot Standard Font
G1OSMONT.G1D 1K Basic 02.01.00 07-27-05 09:49
System Screen Information
G1OSMONT.G1 302K Basic 02.01.00 07-27-05 09:49
System Screen Data
G1FTTNMG.F0N 40K Basic 02.01.00 07-27-05 09:49
True Type Numerical Font
G1CMNET1.OUT 101K Comm. 02.01.00 07-27-05 09:51
MELSECNET/10
G1CMAQDR.OUT 107K Comm. 02.01.00 07-27-05 09:51
A/QnA/QCPU,QJ71C24
G1CMFX.OUT 122K Comm. 02.01.00 07-27-05 09:51
MELSEC-FX
G1OSNETM.OUT 128K Option 02.01.00 07-27-05 09:51
Network monitor
G1OSNETM.G1D 1K Option 02.01.00 07-27-05 09:51
Network monitor Information
G1OSNETM.G1 44K Option 02.01.00 07-27-05 09:51
Network monitor Data

1 If touch [Property] button after selecting the property displaying target folder, the Property display shown left is displayed. In Property display, the following information is displayed for each file selected by 1.

Item	Description
Name	Displays the file name.
Size	Displays the file size.
Type	Displays the following items according to the file type. Boot : BootOS Standard : Standard monitor OS Communication : Communication driver Option : Optional function OS
Version	Displays the version of BootOS and OS.
Date and time	Displays the date and time of the file creation.

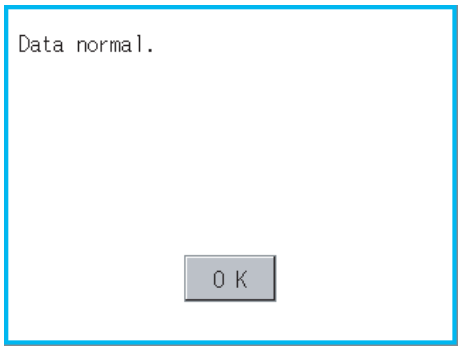
2 If touch [▲] [▼] button of the scrollbar, the screen scrolls up/down by one line.
If touch [▲▲] [▼▼] button, the screen scrolls up/down by one screen.

3 Touching [⊠] button returns the screen to the previous screen display.

5 Data check operation

Carries out data check of the selected system file.

Dialog at data check normal



Dialog at data check abnormal

1. Touch [Data check] button after selecting a data check target file.
   The dialog mentioned left will be displayed after executing data check.
2. Touching [OK] button closes the dialog.

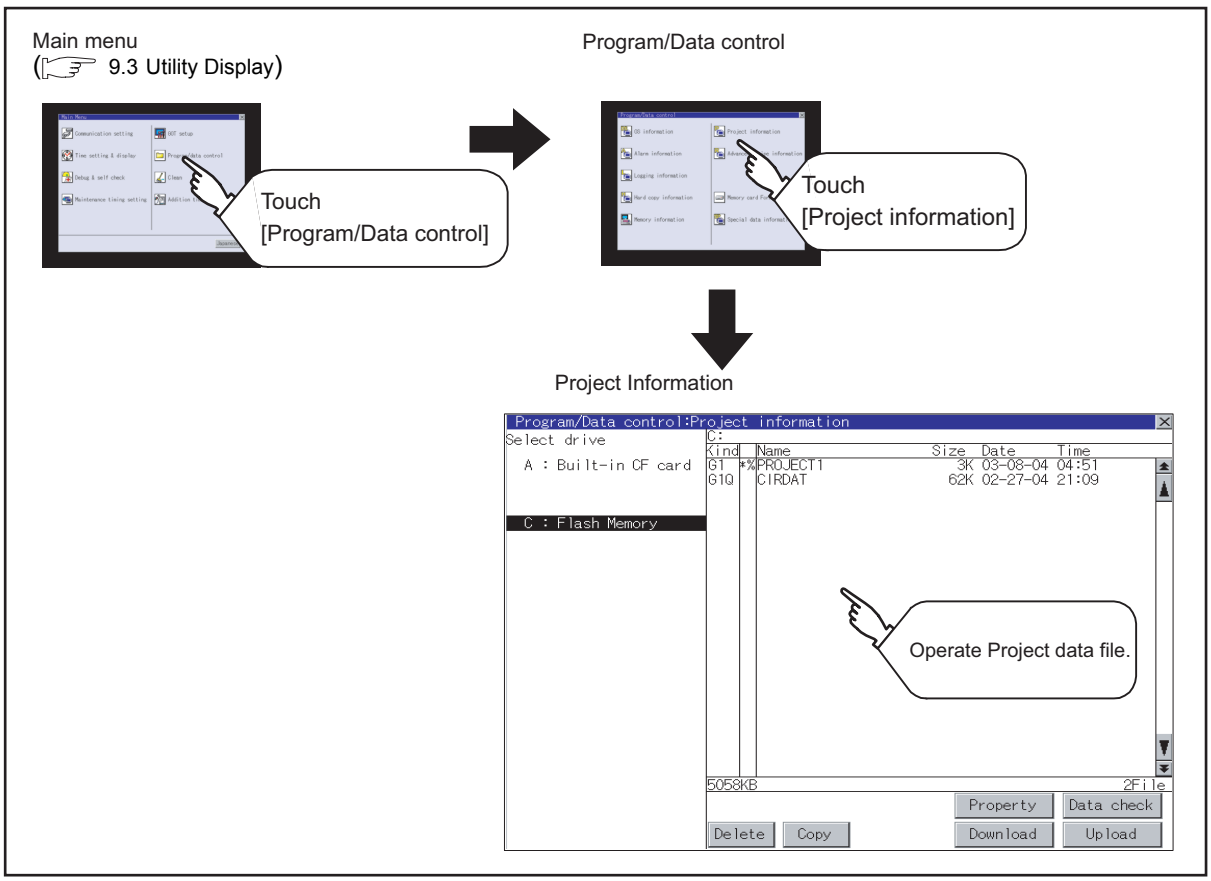
13.3 Project Information

13.3.1 Function of OS information

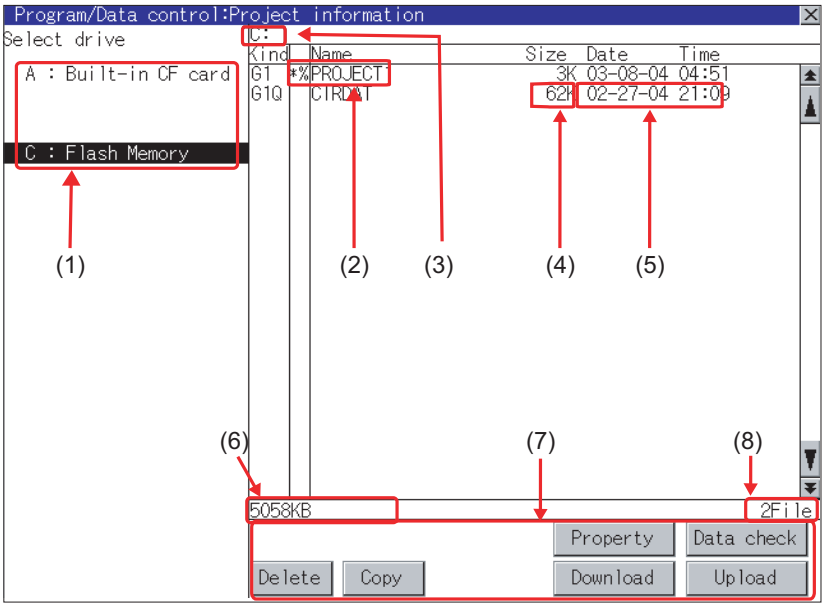
The project data files stored in each drive (A: standard CF card, C: built in flash memory) can be displayed by lists.
In addition, the files can be downloaded, uploaded, deleted or copied, etc.

Function	Description	Reference page
Information display of files and folders	Displays the kind, name, data size, the creation date and time of the file or folder.	13-18, 13-19
Delete	Deletes project data.	13-19
Copy	Copies project data. (Enabled to copy only from the A drive to the A drive)	13-20
Property display	Displays the project data creation date, author name and the version of GT Designer2.	13-15
Data check	Data check of the file can be executed.	13-16
Download	Downloads the project data written in the A drive (Standard CF card) to C drive (Built in flash memory).	13-23
Setup	The project data to be displayed can be selected.	13-25
Upload	Uploads the project data written in the C drive (Built in flash memory) to the A drive (Standard CF card).	13-26
Setup cancel	Cancels the item which is selected for the project data to be displayed.	13-27

13.3.2 Display operation of project information



13.3.3 Display example of project information



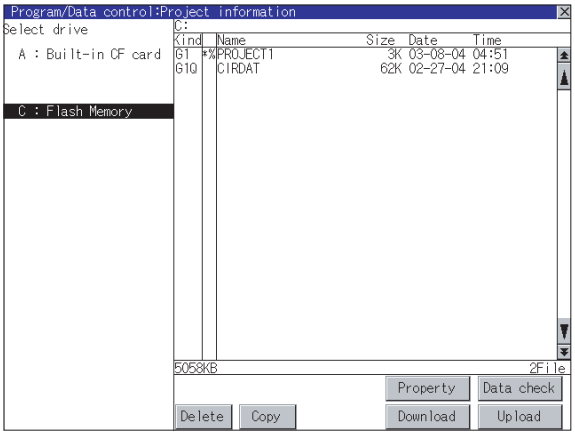
Number	Item	Description
(1)	Select drive	The drive by which a file or folder is displayed can be selected. When the CF card is not connected, [A: Built-in CF card] is not displayed.
(2)	Name	The project data (Project Folder) in the selected drive is displayed. When the name exceeds 18 characters, the 19th and later characters are not displayed. The project data being monitored on the GOT is preceded by "*%".
(3)	Path name	Displays the path name of drive/folder which is currently displayed.
(4)	Size	Displays the size of the file displayed in Name.
(5)	Date and time	Displays the date and time when each file is installed.
(6)	The size of drive	Displays the size in use and the entire size of the drive which is selected by drive selection. (Only the size in use is displayed when selecting the C drive.)
(7)	Operation switch	Displays the execution switch of functions (download, upload, etc.) which can be carried out in [Project information].
(8)	Number of folders and files	Displays the total number of the displayed files and folders.

Remark Displayed folders and files

Refer to the following for the details of displayed folders and files.

☞ 13.1.5 Display file

1 Display operation of project information



1 Touch the drive in Select drive. The project data in that drive will be displayed.

2 Touch the project data. It is then selected and highlighted.

3 Refer to the following for operation of delete, copy, property, data check, download, upload.

Delete ..... this section 2

Copy ..... this section 3

Property ..... this section 4

Data check ..... this section 5

Download, setup

..... this section 6

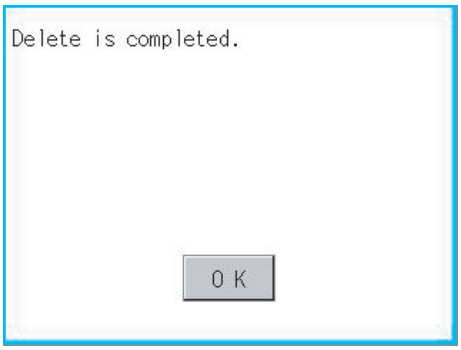
Upload, setup cancel

..... this section 7

4 Touching ☒ button closes the screen.

2 Delete operation

This operation deletes the selected file.



1 Touch and select the file to delete.

2 Screen mentioned left is displayed if [Delete] button is touched.
Confirm the deletion targeted file is specified correctly.
If touch [OK] button, the file is deleted.
If touch [Cancel] button, the deletion is canceled.

3 When the deletion completes, the dialog box shown left is displayed.
If touch [OK] button, the dialog is closed.

3 Copy operation

The file in the A drive is copied to another directory of the A drive.
Copy to/from C drive is disabled.

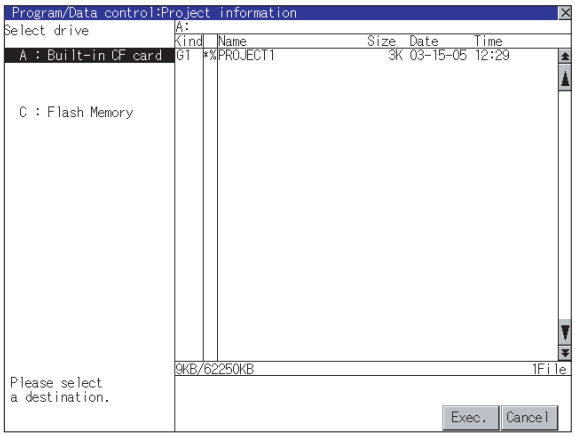
1 Install CF card in the PC, in which create a folder for the copy destination.
Set the same character with [System Setting] of [System Environment] of GT Designer2 for the folder name.

☞ GT Designer2 Version□ Screen Design Manual
(3.1 GOT/PLC Type Setting)

2 Install the CF card mentioned above to GOT.
Refer to the following for inserting/removing method of CF card.

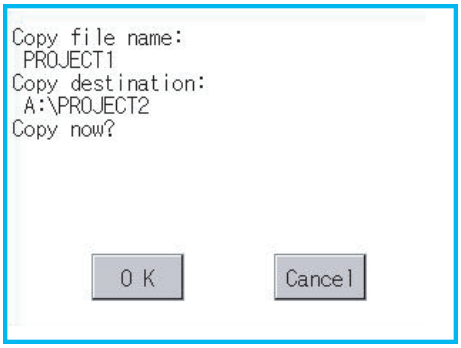
☞ 8.1 CF Card

3 Open [Project Information] screen to select the file to copy.



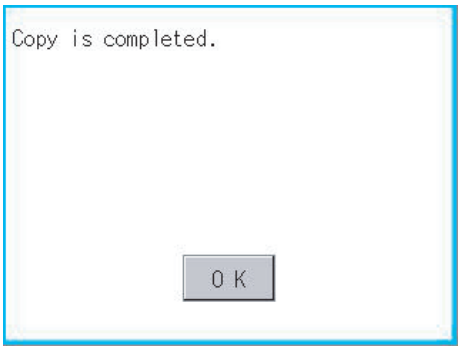
4 If touch [Copy] button, the message [Please select a destination.] is displayed in the left bottom of the screen.

5 If the copy destination folder is touched, the screen display is changed to the folder of copy destination.
At this time, it cannot be copied into the same folder where the file exists.
Select other folders.



6 If touch [Next] button, the dialog mentioned left is displayed.

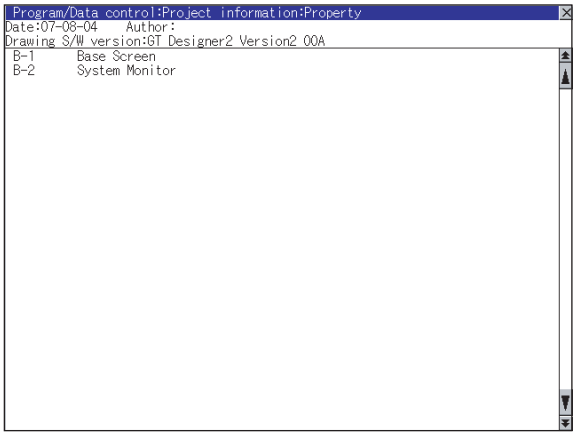
7 Touch [OK] button.
If there is no file of the same name in the copy destination folder, starts to copy.
When there is a file of the same name in the copy destination folder, the dialog mentioned left is displayed without starting the copy.
If copy, in this case, the copied file is overwritten to the project data in the copy destination folder.
If touch [OK] button, starts to copy.
If touch [Cancel] button, cancels to copy.



8 When copying completes, the dialog of completion is displayed.
If touch [OK] button, closes the dialog.

4 Property display operation

Displays the property of the project data in the selected folder.



1 If touch [Property] button after selecting the project data to display the property, the property is displayed as shown left.
In property display, the following information is displayed.

Item	Description
Date	Displays the creation date of the file.
Author	Displays the author of the project data.
Drawing S/W version	Displays name and version of the drawing software by which the project data is created.

2 If touch [▲] [▼] button, the screen scrolls up/down line by line.

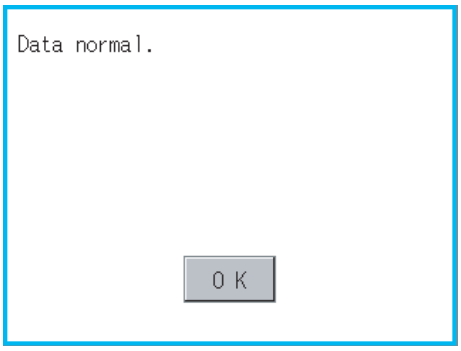
3 If touch [⏫] [⏬] button, the screen scrolls up/down by one screen.

4 If touch [⊠] button, the property display is closed and returned to the previous screen.

5 Data check operation

Carrys out data check of the selected project file.

Dialog at data check normal



Dialog at data check abnormal

1. Touch the [Data check] button after selecting the file for data check.
   The data check is executed and the result is displayed by the dialog shown left.
2. If touch [OK] button, the dialog is closed.

6 Download operation/setup operation

(1) Download operation

Transfers the project data stored in the A drive (Standard CF Card) to the C drive (Built in flash memory). (The GOT monitors using the data in the C drive.)

Point

Before download operation

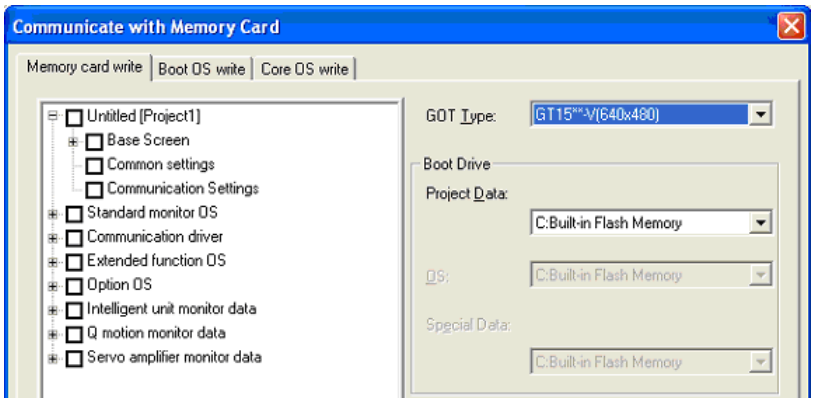
(1) Setup cancel

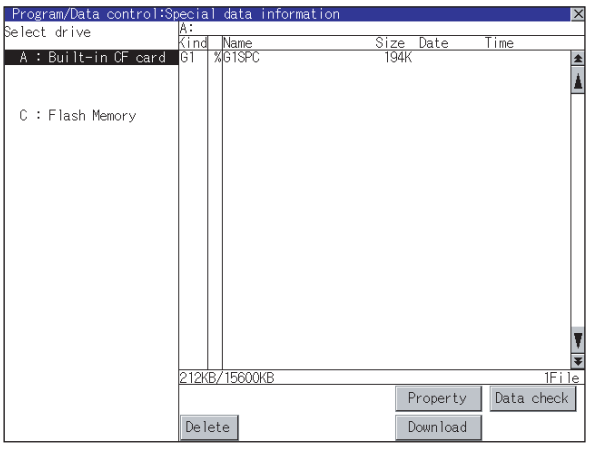
When the project data in the A drive is set up, the project data cannot be downloaded to the C drive.

Execute setup cancel (7 (2) Setup cancel) before downloading the project data.

(2) Project data to be stored in a CF card

When storing the project data from GT Designer2 to CF card, select [C: Built-in flash memory] for [Project Data] in the [Boot Drive].





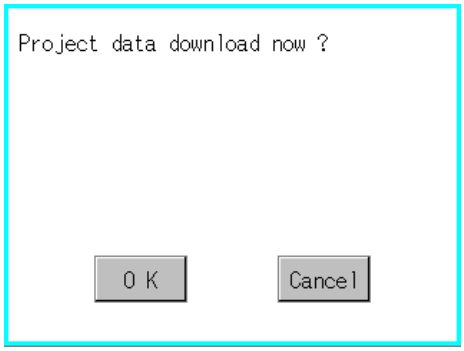
(Continued to next page)

1 Install a CF card in the GOT

Refer to the following for inserting/removing method of CF card.

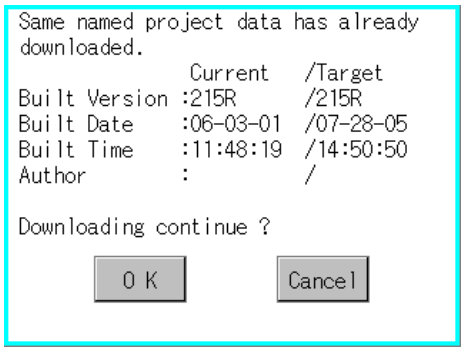
8.1 CF Card

2 Touch [A: Standard CF Card] in Select drive



3 If touch the Download button, the dialog mentioned left is displayed.

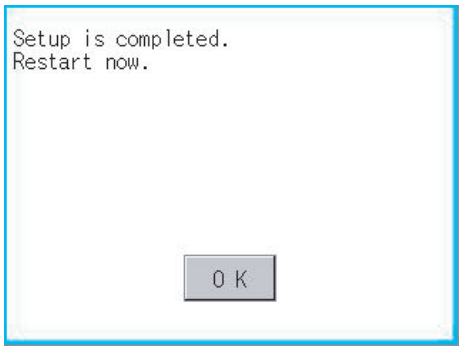
Touching the OK button executes downloading.



4 If any project data with the same name exists in the C drive, the screen shown left is displayed without starting downloading.

In this case, the project data of the C drive is overwritten with the project data of the A drive when downloaded.

Touching the Cancel button cancels the downloading.



5 When the downloading is completed, the dialog mentioned left is displayed.

Touching the OK button restarts the GOT.

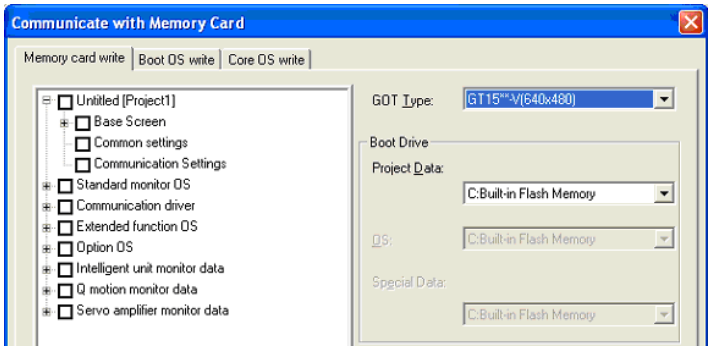
(2) Setup operation

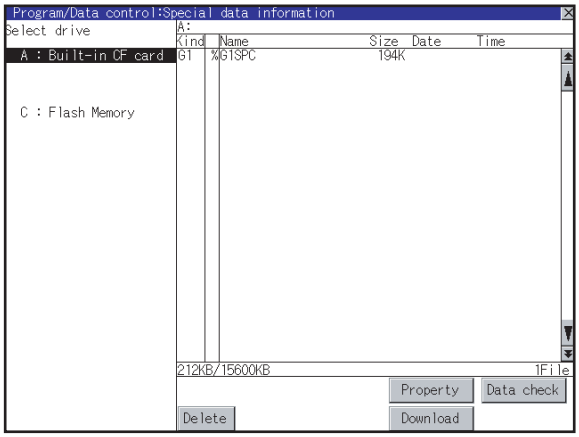
Sets the project data stored in the A drive (Standard CF Card) to be used in the GOT.
(The GOT monitors using the data in the A drive.))

Point

Before setup operation

When storing project data from GT Designer2 to CF card, select [A: Standard CF Card] for [Project Data] in [Boot Drive].



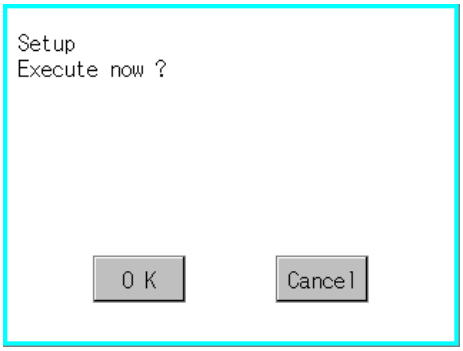


1 Install a CF card in the GOT.

For how to install a CF card, refer to the following.

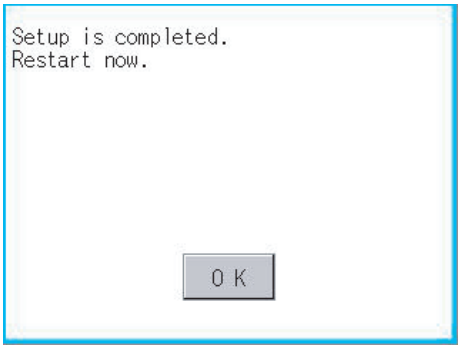
8.1 CF Card

2 Touch [A: Standard CF Card] in Select drive.



3 If touch the Download button, the dialog mentioned left is displayed.

If touch OK button, the setup is executed.



6 When the setup is completed, the dialog mentioned left is displayed.

Touching the OK button restarts the GOT.

7 Upload/setup cancel operation

(1) Upload operation

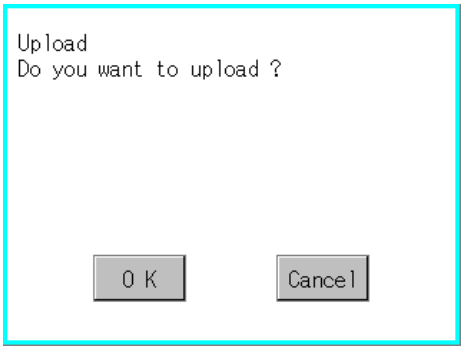
By upload operation, the project data is transferred from the C drive (Built in flash memory) to the A drive (Standard CF Card).

Point

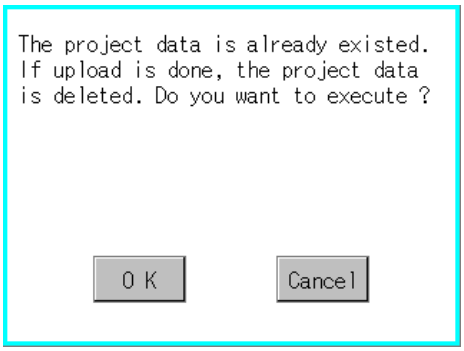
Before setup operation

The project data cannot be uploaded to the A drive when the project data of the A drive is set up.

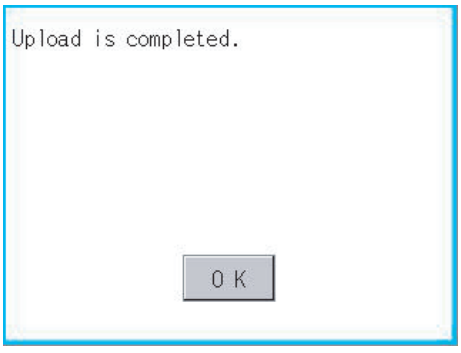
Execute setup cancel (☞ 7 (2) Setup cancel operation) before uploading the project data.



1. TTouch [A: Standard CF Card] in Select drive.
2. If touch the [Upload] button, the screen mentioned left is displayed.
3. Touching the [OK] button executes uploading.



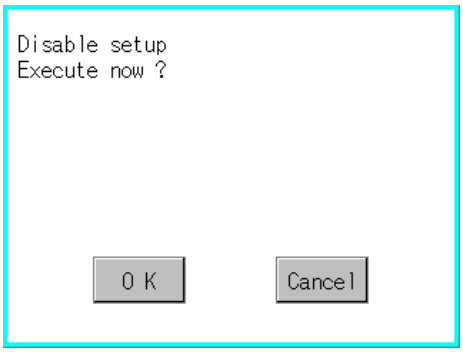
4. If any project data with the same name exists in the A drive, the screen shown left is displayed without starting uploading.
   In this case, touching the [OK] button overwrites the project data of the A drive with the project data with the same name of the A drive.
   Touching the [Cancel] button cancels uploading.



5. When the uploading is completed, the dialog mentioned left is displayed.
   Touching the [OK] button restarts the GOT.

(2) Setup cancel operation
By setup cancel, setup is canceled.

.



1 Touch [A: Standard CF Card] in Select drive.

2 If touch the Upload button, the screen mentioned left is displayed.

3 If touch the OK button, setup cancel is executed.

4 When the setup cancel is completed, the dialog mentioned left is displayed.
Touching the OK button restarts the GOT.
After restart, the GOT monitors with the project data in the C drive.

13.4 Alarm Information

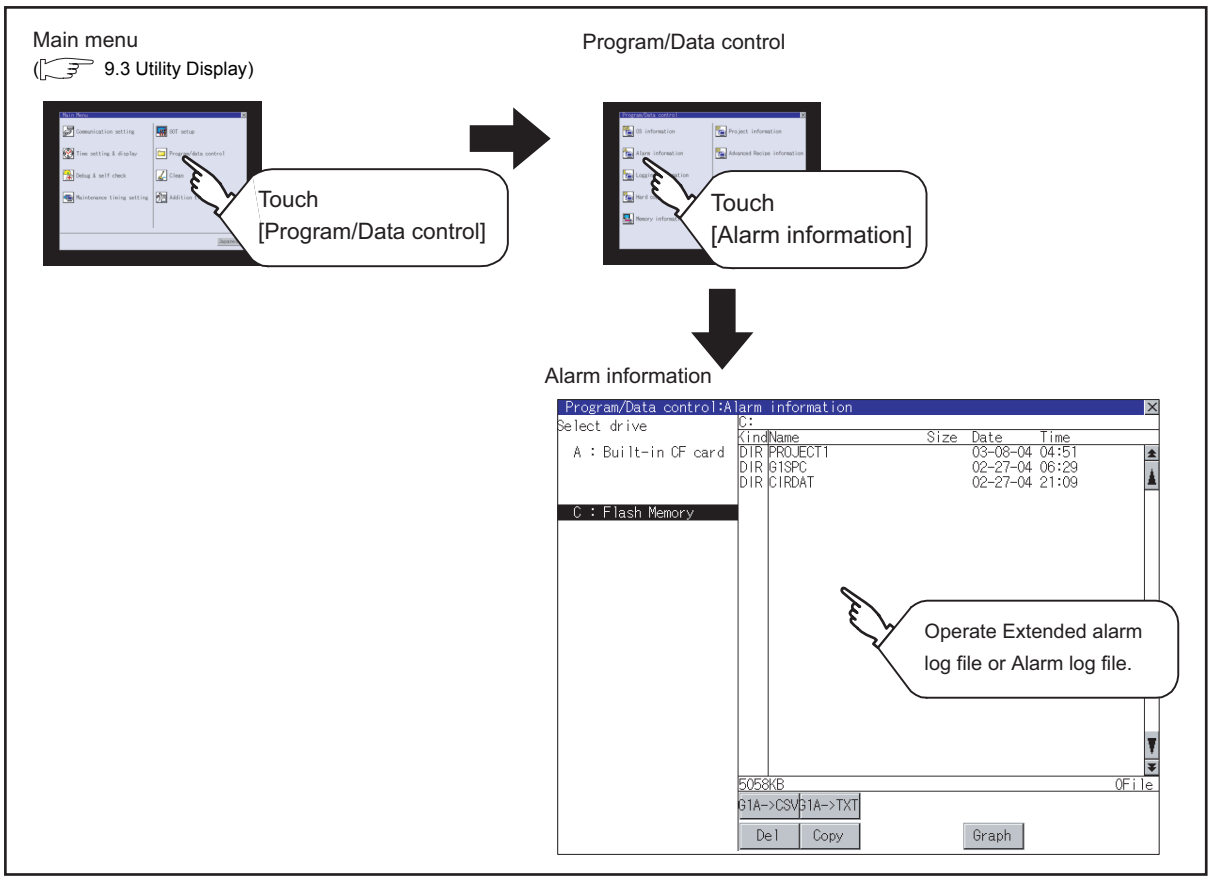
13.4.1 Function of alarm information

The extended alarm log file or alarm log file held by each drive (A: Built-in CF card, C: Flash Memory) is displayed.
The functions below can be carried out for files.
For details of Advanced Alarm, refer to the following manual.

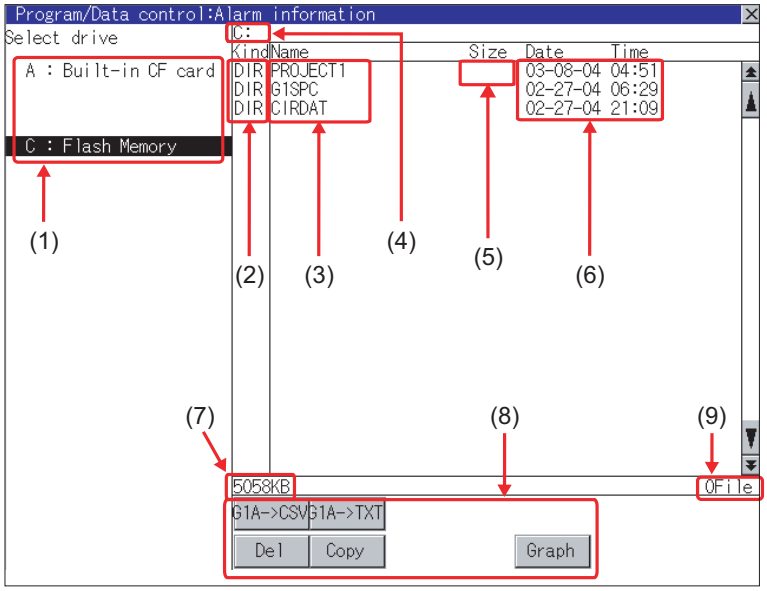
☞ GT Designer2 Version☐ Screen Design Manual (8 ALARM)

Function	Description	Reference page
Information display of files and folders	Displays name, data size, creation date and time of file or folder.	13-29, 13-30
G1A → CSV conversion	Converts the G1A file of the extended alarm log file to CSV file.	13-31
G1A → TXT conversion	Converts the G1A file of the extended alarm log file to TXT file.	13-31
Deletion	Deletes file.	13-19
Copy	Copys file.	13-20
Graph	Displays the extended alarm watch result by historical graph or tally graph.	13-34

13.4.2 The display operation of alarm information



13.4.3 The display example of alarm information



Number	Item	Description
(1)	Select drive	The drive which displays file or folder can be selected. When CF card is not installed, [A: Built-in CF card] is not displayed.
(2)	Kind	Indicates whether the displayed name is file or folder. In case of file, displays the extension; in case of folder, displays "DIR".
(3)	Name	Displays the file name or folder name. For the long file/folder name, entire part may not be displayed. Confirm the nondisplayed part with the Copy button, etc. (☞ 13.4.4 4 Copy operation) After confirmation, touch the Cancel button to cancel the operation.
(4)	Path name	Displays the path name of drive/folder which is currently displayed.
(5)	Size	Displays the size of the file displayed in Name.
(6)	Date and time	The date and time when each file was created are displayed.
(7)	The size of drive	Displays the size in use and the entire size of the drive which is selected by drive selection. (Only the size in use is displayed when selecting the C drive.)
(8)	Operation switch	Execution switch of each function.
(9)	Number of folders and files	Displays the total number of the displayed files and folders.

Point

Display of creation date and time

The creation date and time display is not updated even if a file is created or updated while displaying the alarm information display screen.
If close the screen currently displayed (moving the screen to the folder of the upper hierarchy, etc.) and display the screen again, the updated contents are displayed.

Remark

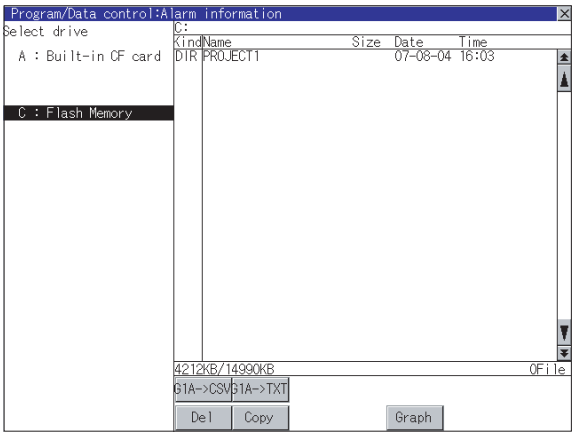
Folders and files displayed

Refer to the following for the details of folders and files displayed.

☞ 13.1.5 Display file

13.4.4 Alarm information operation

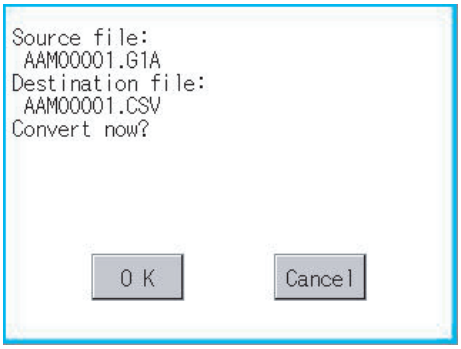
1 The display operation of alarm information



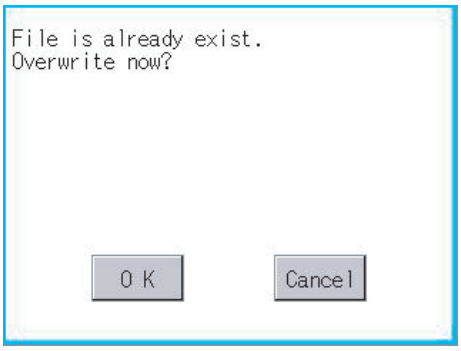
1. If touch a drive of select drive, the information of the touched drive is displayed.
2. If touch a folder name, the information of the touched folder is displayed.
3. If touch a folder of ". .", the information of the folder of the one upper hierarchy is displayed.
4. If touch ▲ ▼ button of the scrollbar, the screen scrolls up/down by one line.
   If touch ⏫ ⏬ button, the screen scrolls up/down by one screen.
5. If touch a file name, the file is selected.
6. Refer to the following for G1A → CSV, G1A → TXT, delete, copy, graph operations.
   G1A → CSV ,
   G1A → TXT ..... ☞ this section 2
   Delete ..... ☞ this section 3
   Copy ..... ☞ this section 4
   Graph ..... ☞ this section 5
7. If touch ☒ button, the screen is closed.

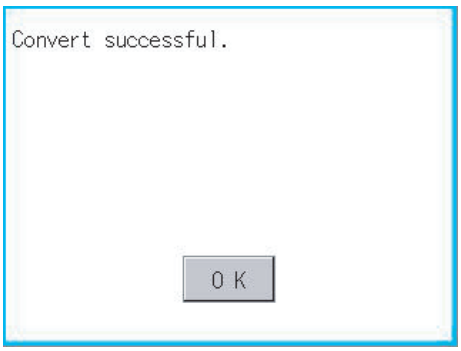
2 G1A → CSV conversion operation, G1A → TXT conversion operation

The selected G1A file is converted to CSV file or TXT file.



(Example: Dialogue when G1A->CSV button is touched)





1 Touch and select the G1A file which is to be converted to CSV file or TXT file.

2 The following dialogue is displayed when touching the following button according to the file type to convert to.

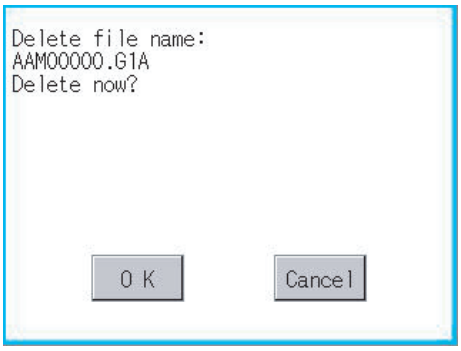
- CVS file: G1A->CSV Button
- TXT file : TXT->CSV Button

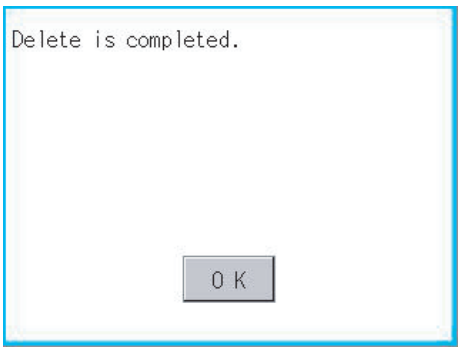
3 Touch OK button.
When the file, whose name is the same, exists in the destination folder, the dialog showed at left appears without starting the conversion.
If touch the OK button, overwrites the file.
If touch Cancel button, cancels the conversion.

4 The message of completion is displayed in dialogue when conversion is completed.
If touch OK button, the dialog is closed.

3 Deletion operation

Deletes selected files.





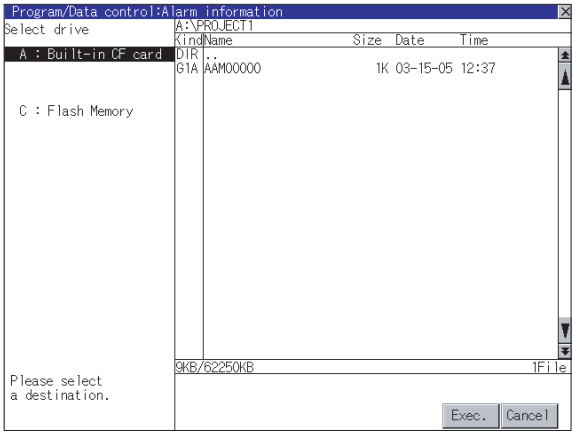
1 Touch and select the file to delete.

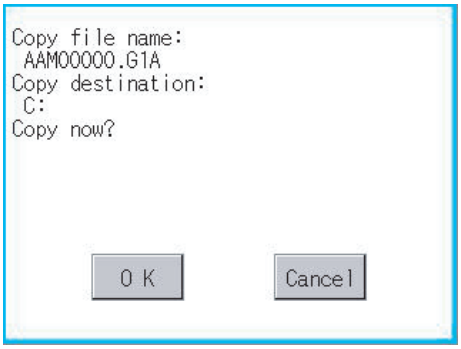
2 If touch [Del] button, the dialog mentioned left is displayed.
If touch [OK] button, the file is deleted.
If touch [Cancel] button, the deletion is canceled.

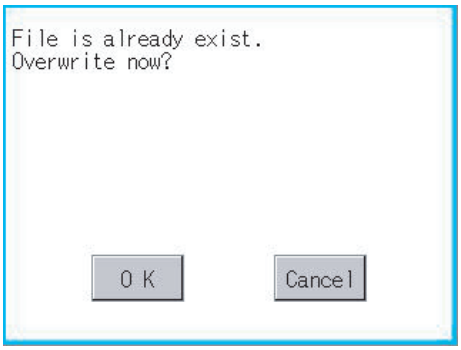
3 When the deletion is completed, the completion dialog is displayed.
If touch [OK] button, the dialog is closed.

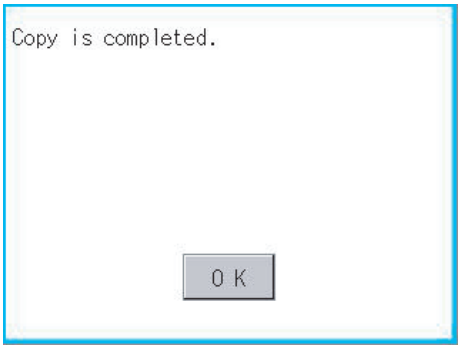
4 Copy operation

Copies the selected file.









1 Touch and select the file to copy.

2 If touch [Copy] button, the message [Please select a destination.] is displayed in the left bottom of the screen.

3 If the copy destination folder is touched, the screen display is changed to the folder of copy destination.
At this time, it cannot be copied into the same folder where the file exists.
Select other folders.

4 If touch [Next] button, the following dialog shown left is displayed.

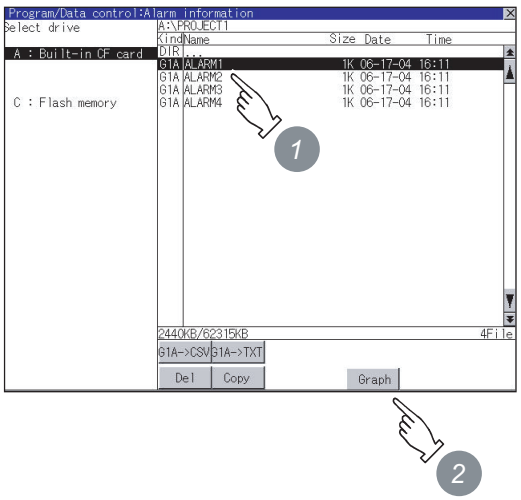
5 Touch [OK] button.
If there is a file of the same name in the copy destination folder, the following dialog is displayed without starting the copy.
If touch the [OK] button, overwrites the file.
If touch [Cancel] button, cancels to copy.

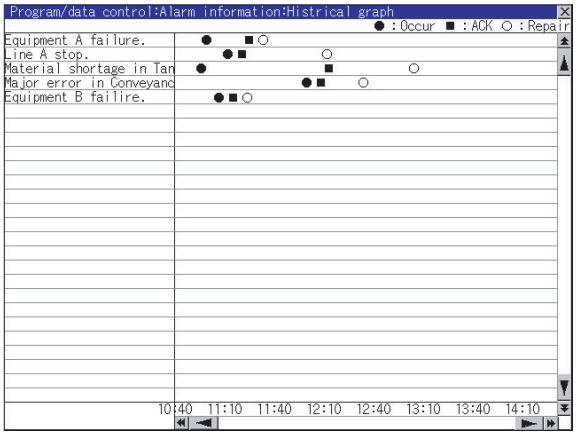
6 When the copy is completed, the dialog of completion is displayed.
If touch [OK] button, closes the dialog.

5 Graph operation

Displays the selected extended alarm log file in a graph.
When the extended alarm watch (advanced user alarm, advanced system alarm) is set in history mode, the selected extended alarm log file is displayed in historical graph (☞ (1) Historical graph display).
When set in accumulation mode, displayed it in tally graph (☞ (2) Tally graph display).
Refer to the following for details related to setting of the extended alarm watch.

☞ GT Designer2 Version□ Screen Design Manual (8 ALARM)




Program/data control:Alarm information:Histrical graph
● : Occur ■ : ACK ○ : Repair
Equipment A failure.
Line A stop.
Material shortage in Tan
Major error in Conveyanc
Equipment B failire.
10:40 11:10 11:40 12:10 12:40 13:10 13:40 14:10

(Example: Historical graph)

1 Touch and select the G1A file to display in a graph.

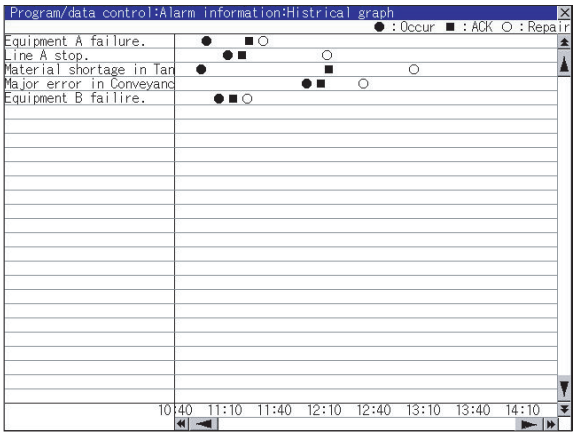
2 If touch [Graph] button, displays the historical graph or tally graph according to the setting of the extended alarm watch.

3 When move a graph, operate as follows.

- If touch [▲] / [▼] button, moves the graph up/down line by line.
- If touch [⏫] / [⏬] button, moves the graph up/down by one screen.
- If touch [◀] / [▶] button, moves the graph to left/right by one column.
- If touch [⏪] / [⏩] button, moves the graph to left/right by one screen.

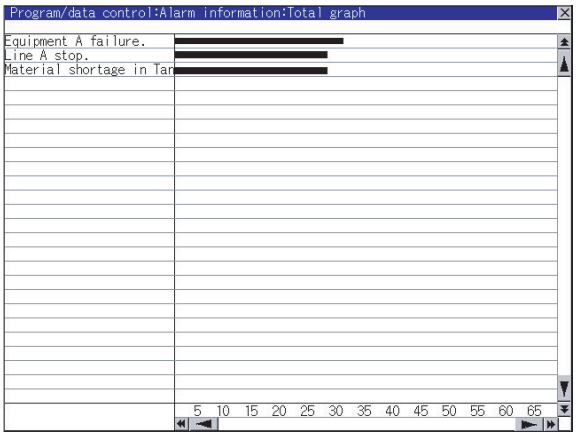
4 If touch [⊠] button, closes the graph.

(1) Historical graph display


Program/data control:Alarm information:Histrical graph
● : Occur ■ : ACK ○ : Repair
Equipment A failure.
Line A stop.
Material shortage in Tan
Major error in Conveyanc
Equipment B failire.
10:40 11:10 11:40 12:10 12:40 13:10 13:40 14:10

- Displays the generated time (●), confirmed time (■) and restored (○) time of each alarm.
- Displays the time scales by 30 minutes interval in the bottom of the graph.
- The alarms generated in the order of registering alarm are displayed.
- By the name of each alarm, the contents set for the message of the general alarms by GT Designer2 are displayed with up to 12 characters of full-size character (up to 24 half-size characters).
  The 13th of full-size character and after (the 25th and after for half-size character) are not displayed.
- The graph displays the alarm within up to 26 lines in one screen.

(2) Tally graph display


Program/data control:Alarm information:Total graph
Equipment A failure.
Line A stop.
Material shortage in Tan
5 10 15 20 25 30 35 40 45 50 55 60 65

- Displays the generated frequency of each alarm by the sideways bar chart.
- By the name of each alarm, the contents set for the message of the general alarms by GT Designer2 are displayed with up to 12 characters of full-size character (up to 24 half-size characters).
  The 13th of full-size character and after (the 25th and after for half-size character) are not displayed.
- The graph displays the alarm within up to 26 lines in one screen.

13.5 Hard Copy Information

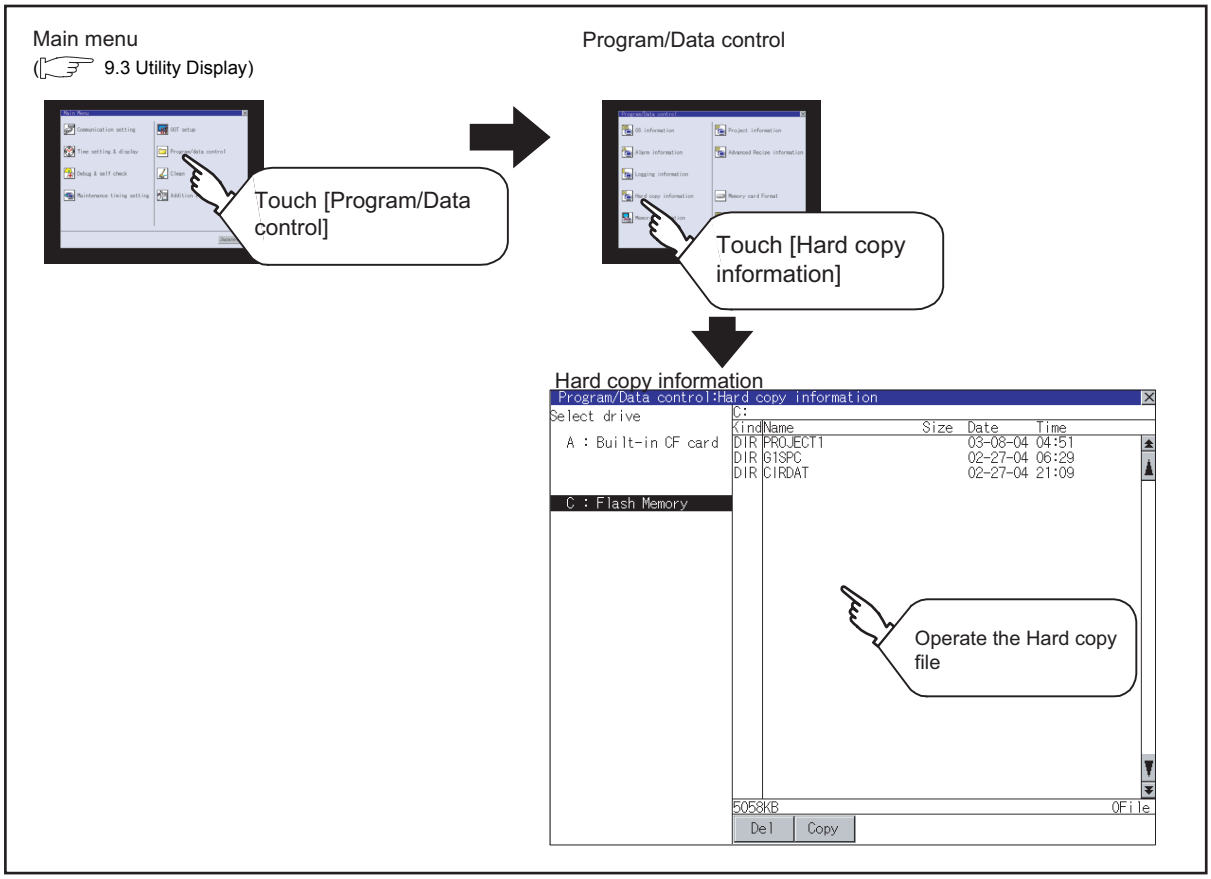
13.5.1 The function of hardcopy information

Carries out delete, copy and move to the file created by the hardcopy function.
Refer to the following manual for details of hard copy function.

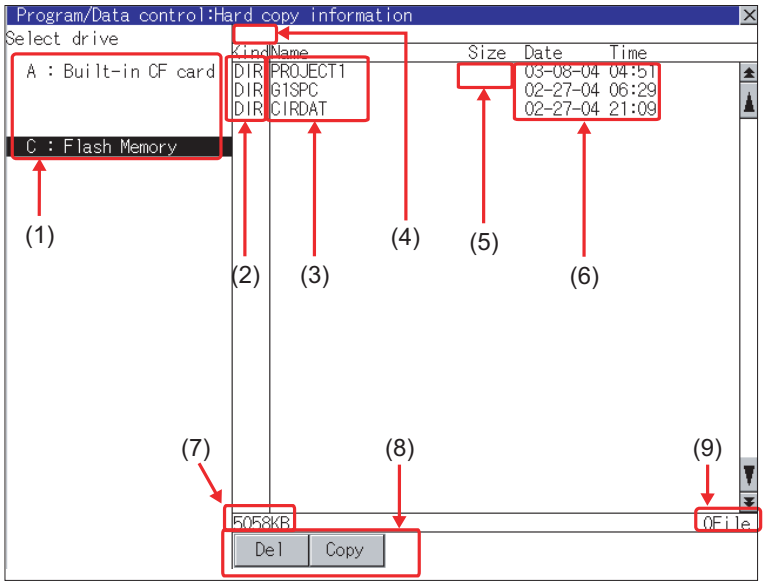
☞ GT Designer2 Version☐ Screen Design Manual (13.1 Hard copy)

Function	Description	Reference page
Information display of files and folders	Displays the kind, name, data size, creation date and time of the file or folder.	13-37, 13-38
Delete	Deletes the file.	13-19
Copy	Copies the file.	13-20

13.5.2 The display operation of hardcopy information



13.5.3 Display exmaple of hardcopy information



Number	Item	Description
(1)	Select drive	The drive which displays file or folder can be selected. When CF card is not installed, [A: standard CF Card] is not displayed.
(2)	Kind	Indicates whether the displayed name is file or folder. In case of file, displays the extension; in case of folder, displays "DIR".
(3)	Name	Displays the file name or folder name. For the long file/folder name, entire part may not be displayed. Confirm the nondisplayed part with the [Copy] button, etc. (☞ 13.5.4 3 Copy operation) After confirmation, touch the [Cancel] button to cancel the operation.
(4)	Path name	Displays the path name of drive/folder which is currently displayed.
(5)	Size	Displays the size of the file displayed in Name.
(6)	Date and time	Displays the creation date and time of each file.
(7)	The size of drive	Displays the size in use and the entire size of the drive which is selected by drive selection. (Only the size in use is displayed when selecting the C drive.)
(8)	Operation switch	Execution switch of each function.
(9)	Number of folders and files	Displays the total number of the files and folders displayed.

Point

Display of the creation date and time

The creation date and time display is not updated even if a file is created or updated while displaying the hardcopy information.
To display the updated creation date and time, close the screen currently displayed (by moving to the upper hierarchy folder, etc.) and display the screen again.

Remark

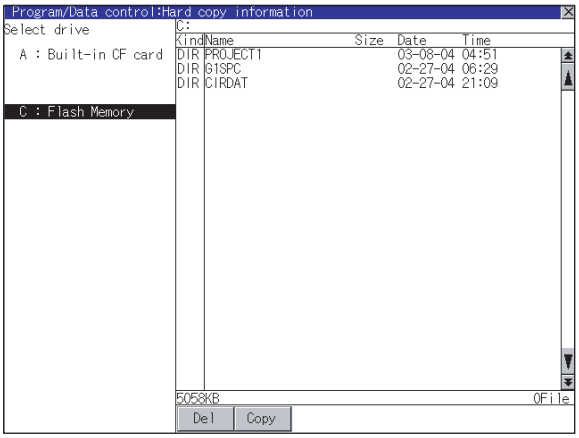
Displayed folders and files

Refer to the following for the details of displayed folders and files.

☞ 13.1.5 Display file

13.5.4 The operation of hardcopy information

1 Display operation of hardcopy information



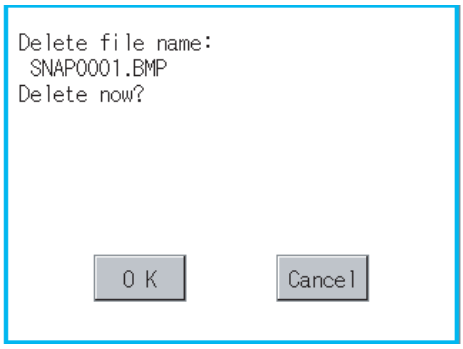
1. If touch a drive of select drive, the information of the touched drive is displayed.
2. If touch a folder name, the information in the touched folder is displayed.
3. If touch a name of the folder of ". .", the information in the folder of one higher hierarchy is displayed.
4. If touch ▲ ▼ button of the scrollbar, scrolls up/down line by line.
   If touch ⏫ ⏬ button, the screen scrolls up/down by one screen.
5. If touch a file name, the file is selected.
6. Refer to the following for the operation of delete and copy.

   Delete ..... ☞ this section 2

   Copy ..... ☞ this section 3
7. If touch ☒ button, closes the screen.

2 Delete operation

Deletes the selected file.



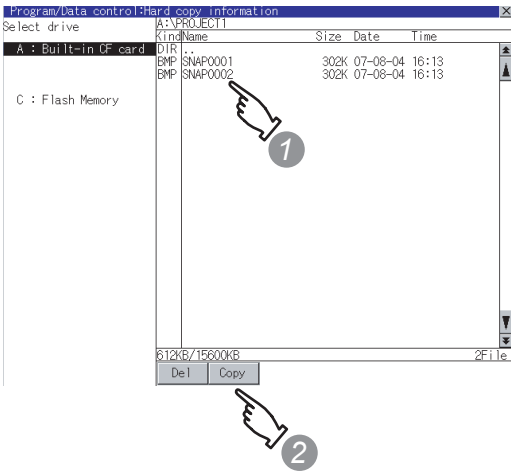
1 Touch and select the file to delete.

2 If touch [Del] button, the screen mentioned left is displayed.
If touch [OK] button, deletes the file.
If touch [Cancel] button, cancel the deletion.

3 When the deletion is completed, the completion dialog is displayed.
If touch [OK] button, the dialog is closed.

3 Copy operation

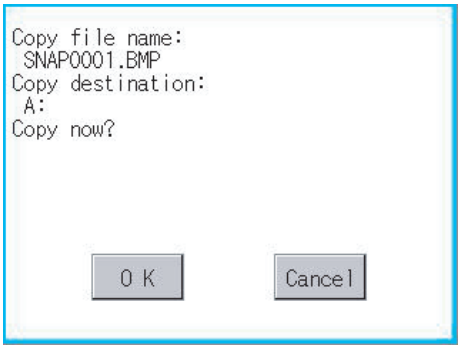
Copies the selected file.



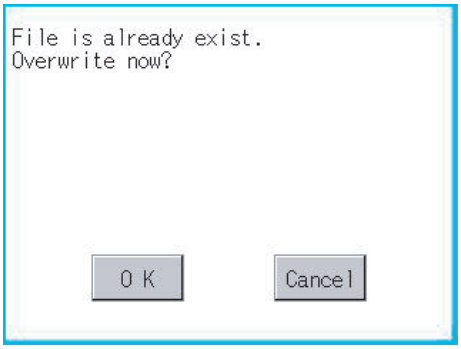
1 Touch and select the file to copy.

2 If touch [Copy] button, the dialog [Please select a destination.] is displayed in the left bottom of the screen.

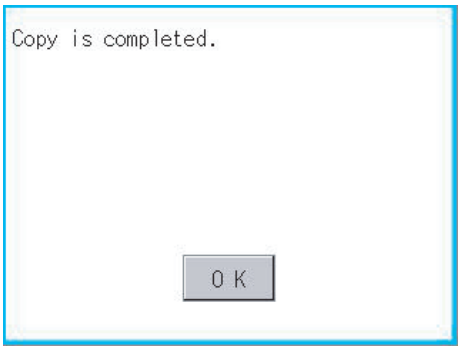
3 If touch the folder of the copy destination, the screen display is changed to the folder of copy destination.
The copied file cannot be copied to its own folder.Select the different folder.



4 If touch [Next] button, the dialog box shown left is displayed.



5 Touch [OK] button.
If there is a file of the same name in the copy destination folder, the screen shown left is displayed without starting to copy.
If touch the [OK] button, overwrites the file.
If touch [Cancel] button, cancels to copy.



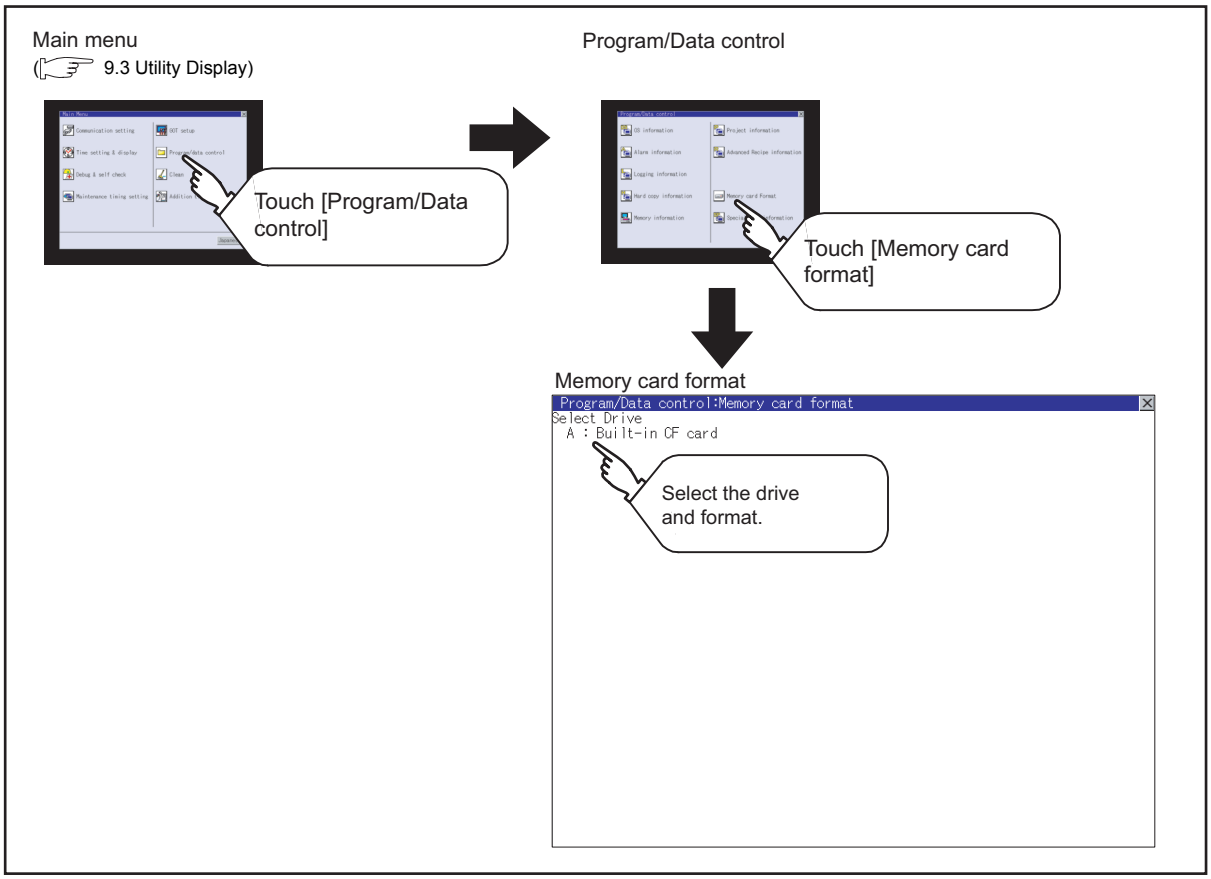
6 When the copy is completed, the dialog of completion is displayed.
If touch [OK] button, the dialog is closed.

13.6 Memory card format

13.6.1 Format function of memory card

Formats the memory card.

13.6.2 Display operation of memory card format

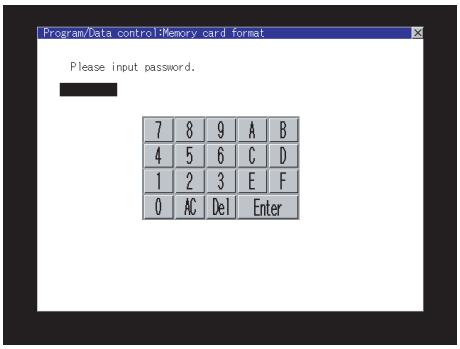


13.6.3 Format operation of memory card

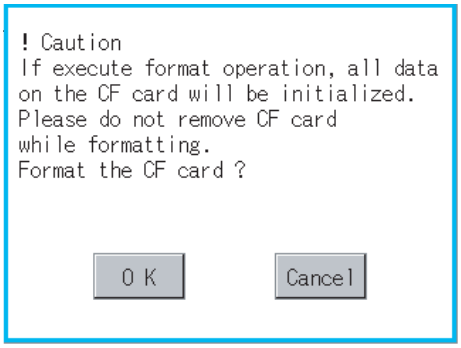
1 Install the memory card to GOT.
Refer to the following for inserting/ removing method of memory card.

☞ 8.1 CF Card

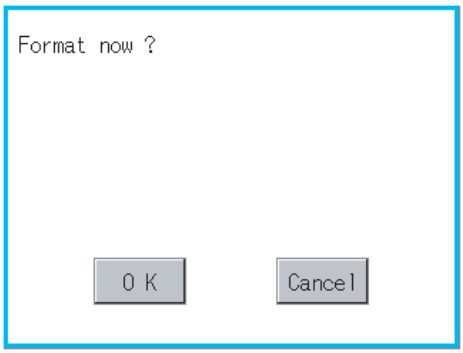
2 Touch and select the drive to format by drive selection.



3 If touch [Format] button, the password input screen is displayed.

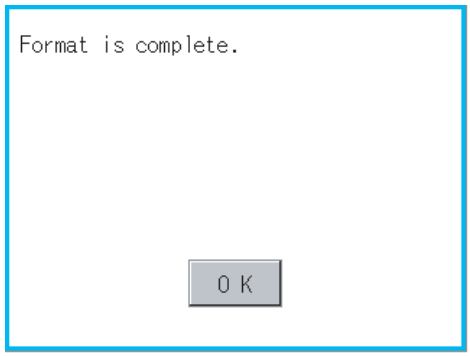

! Caution
If execute format operation, all data on the CF card will be initialized.
Please do not remove CF card while formatting.
Format the CF card ?
O K
Cancel

4 Type [1] [1] [1] [1] and touch the [Enter] key. The dialog box shown on the left will appear. (The password is fixed to 1111.)
Confirm the contents of the dialog.
When execute the memory card format, touch [OK] button.
When cancel the memory card format, touch [Cancel] button.



5 If touch [OK] button by 4, the dialog mentioned left is displayed for reconfirm.

6 Reconfirm whether to format the memory card.
If touch [OK] button, starts formatting.
If touch [Cancel] button, cancels formatting.



7 When the formatting is completed, the completion dialog mentioned left is displayed.

8 If touch OK button, closes the dialog.

Remark Restrictions on formatting

- When use an unformatted memory card in GOT, format the memory card by PC. GOT cannot format the unformatted memory card.
- The formatting of GOT does not change the file system (Example: FAT16) of the memory card and inherits the file system before formatting.

13.7 Advanced Recipe Information

Point

Before using advanced recipe information

For writing/reading into/from a controller with this function or editing of advanced recipe file on the personal computer, refer to the following manual.
Specifications and operating procedure are described.

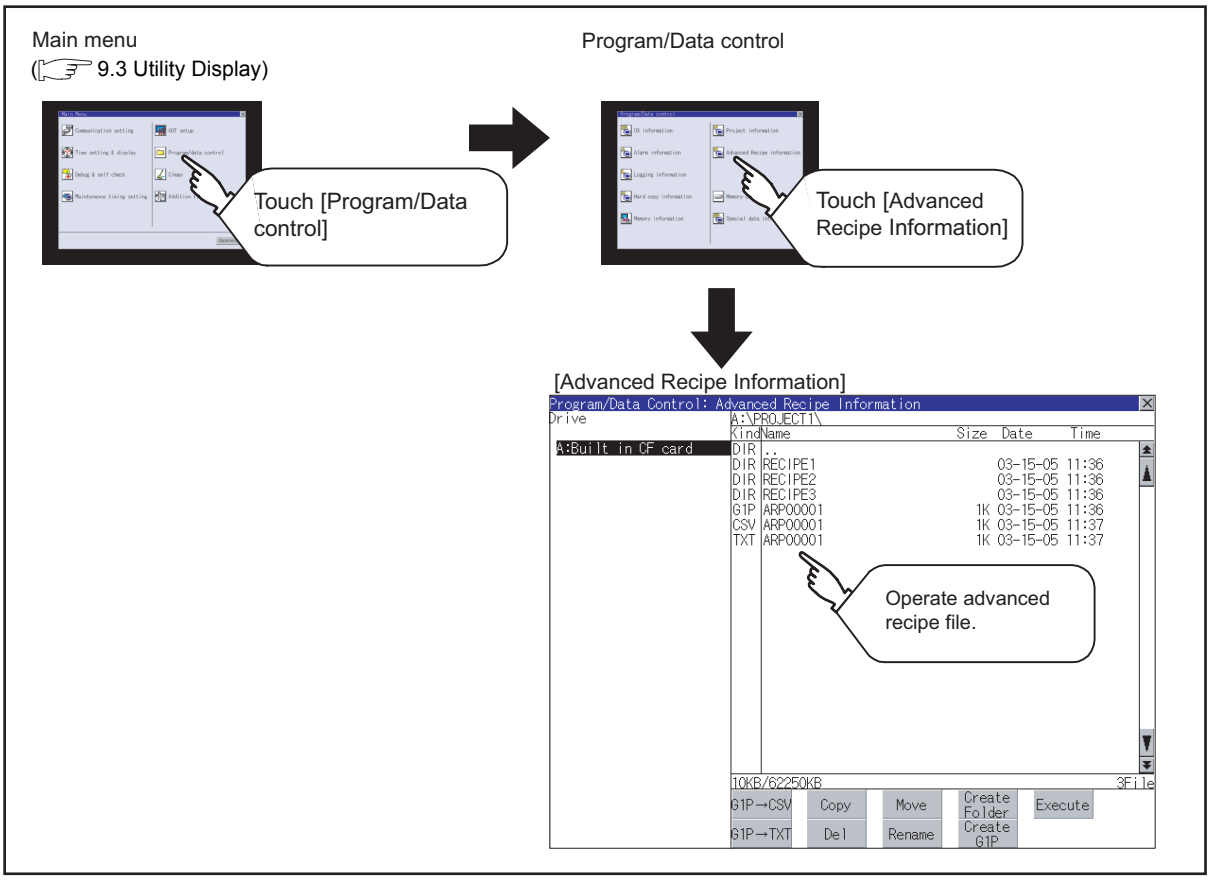
☞ GT Designer2 Version□ Screen Design Manual
(13.1 Advanced Recipe Function)

13.7.1 Function of advanced recipe information

For the advanced recipe file used in advanced recipe function, copy/delete/file output are available.
In addition, it is possible to writing/reading into/from a controller by using this function, without creating the screen to operate the advanced recipe. (Advanced recipe setting of GT Designer2 is required.)

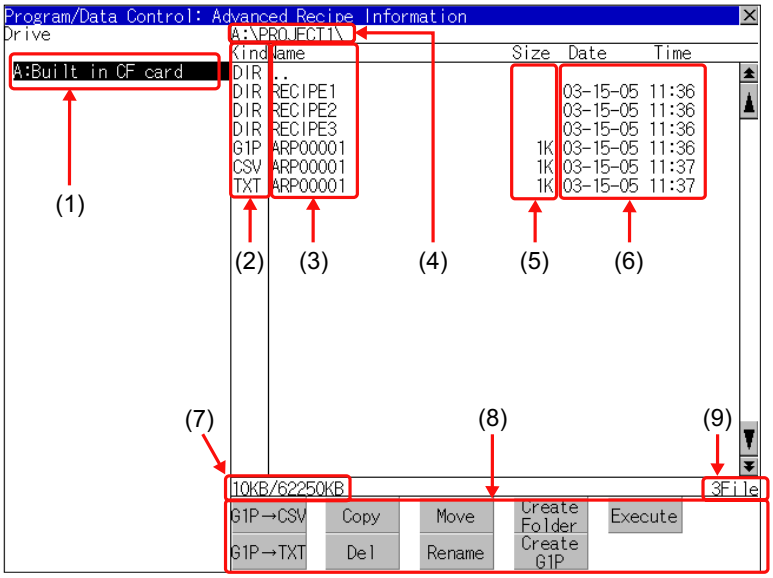
Function		Description	Refer to
Advanced Recipe Information screen	Displaying file, folder data	The file/folder name, data size and creating date & time are displayed.	13-46,13-48
	G1P → CSV conversion	G1P file of advanced recipe file is converted to CSV file.	13-49
	G1P → TXT conversion	G1P file of advanced recipe file is converted to Unicode text file.	13-49
	Del	File or folder is deleted.	13-51
	Copy	File is copied.	13-52
	Move	File is moved.	13-53
	Rename	File name is changed.	13-55
	Create Folder	New folder is created.	13-56
	Create G1P	New G1P file of advanced recipe file is created.	13-57
Advanced Recipe Record List screen	Load record GOT → PLC	Selected record value is loaded in the device of controller.	13-59
	Save record PLC → GOT	The device of controller is saved in selected record.	13-60
	Match records GOT → PLC	Selected record is verified to the device value of controller.	13-62
	Delete Device Value	The device value contained in selected record is deleted.	13-64

13.7.2 Operation of advanced recipe information display



13.7.3 Example of advanced recipe information display

1 Advanced recipe information screen



Number	Item	Description
(1)	Drive	[A: Built-in CF card] is displayed. (Even if CF card is not installed, this message appears.)
(2)	Kind	Indicates whether the displayed name is file or folder. In case of file, displays the extension; in case of folder, displays "DIR".
(3)	Name	Displays the file name or folder name. For the long file/folder name, entire part may not be displayed. Confirm the nondisplayed part with the [Rename] button, etc. (☞ 13.7.4 6 Rename operation) After confirmation, touch the [Cancel] button to cancel the operation.
(4)	Path name	Displays the path name of drive/folder which is currently displayed.
(5)	Size	Displays the size of the file displayed in Name.
(6)	Creating date & time	The date and time when each file was created are displayed.
(7)	Drive size	Displays the used/entire size of drive selected by select drive.
(8)	Operation switch	Execution switch of each function.
(9)	Number of folders and files	Displays the total number of the displayed files and folders.

Point

About the displayed file

The files other than that for advanced recipe are not displayed on the advanced recipe information screen.

Remark

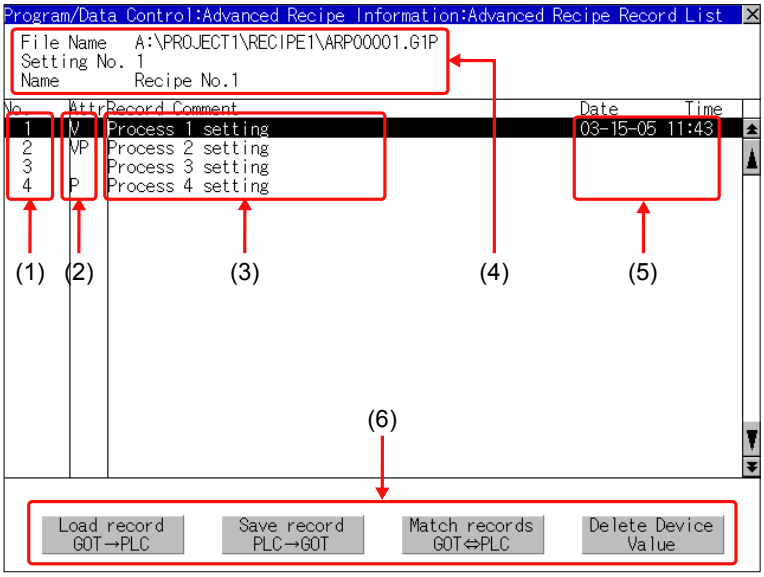
Folders and files displayed

Refer to the following for the details of folders and files displayed.

☞ 13.1.5 Display file

2 Advanced recipe record list screen

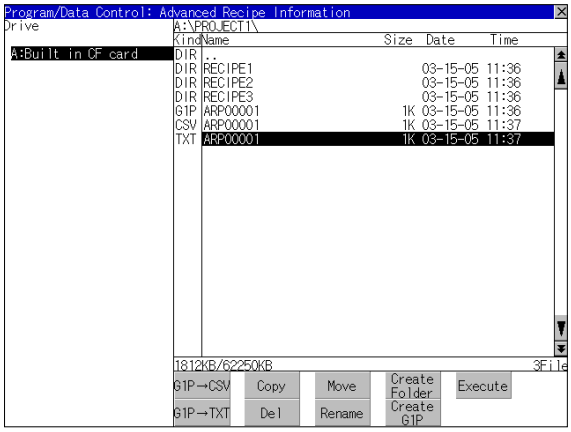
1 Touching the [Excute] button on the advanced recipe information screen after selecting the advanced recipe file, this screen appears.
Records selected in each advanced recipe file can be displayed or saved/loaded.



Number	Item	Description
(1)	No.	Record No. of advanced recipe file is displayed.
(2)	Attr	Attribution of record is displayed. Attribution of record can be changed with GT Designer2. V : Record can be loaded/saved (Record whose value is selected.) VP : Record only for loading (Record whose value is selected and cannot be changed.) Blanc : Record only for saving (Record whose value is deleted or not selected.) P : Record unusable (reserved area) (Record whose value is not selected and cannot be changed.)
(3)	Record Comment	Record Comment is displayed.
(4)	File Name	Path and name of recipe file are displayed.
	Setting No.	Recipe No. is displayed.
	Name	Recipe name is displayed.
(5)	Date and time	Date and time when record comment is updated are displayed.
(6)	Operating switch	Execution switch of each function.

13.7.4 Advanced recipe information operation

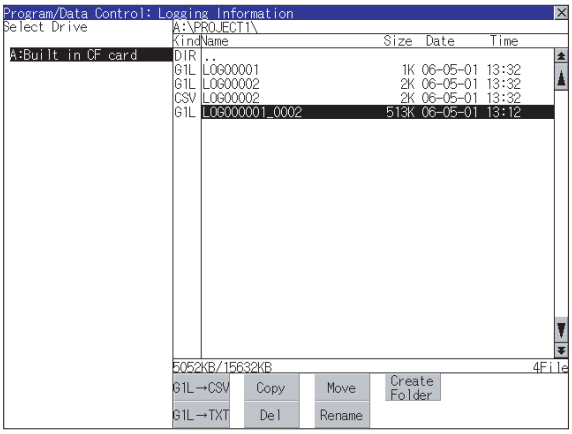
1 Display operation of advanced recipe information

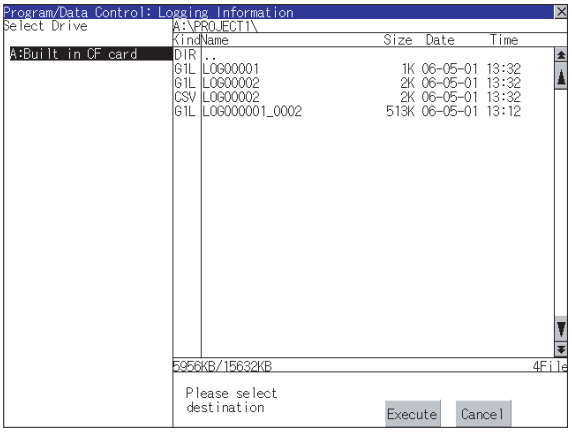


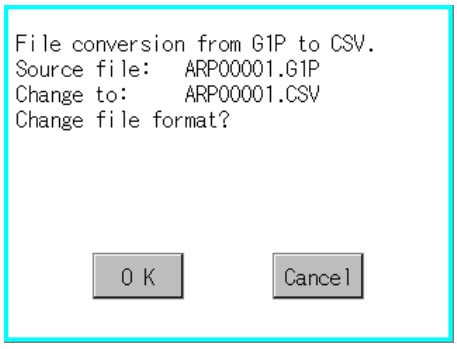
1. If touch a drive of select drive, the information of the touched drive is displayed.
2. If touch a folder name, the information of the touched folder is displayed.
3. If touch a folder of ". .", the information of the folder of the one upper hierarchy is displayed.
4. If touch ▲ ▼ button of the scrollbar, the screen scrolls up/down by one line.
   If touch ⏫ ⏬ button, the screen scrolls up/down by one screen.
5. If touch a file name, the file is selected.
6. For operation of operating switches, refer to the following.
   G1A → CSV ,
   G1A → TXT .....☞ this section 2
   Delete .....☞ this section 3
   Copy .....☞ this section 4
   Move .....☞ this section 5
   Rename .....☞ this section 6
   Create Folder .....☞ this section 7
   Create G1P .....☞ this section 8
   Execute ....☞ this section 9 to 12
7. If touch ☒ button, the screen is closed.

2 G1P → CSV conversion operation, G1P → TXT conversion operation

Advanced recipe file (G1P file) is converted to CSV file or Unicode text file that can be displayed/edited on personal computer.



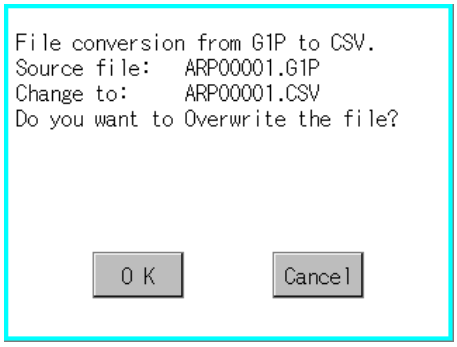




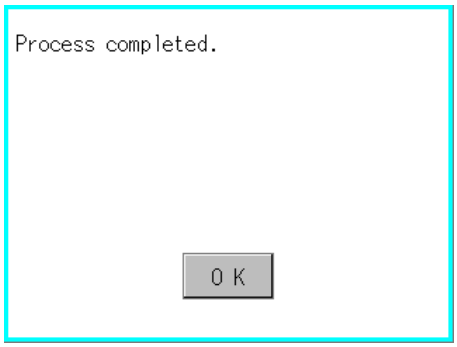
(Example: Dialog if the G1P->CSV button is touched.)

(Continued to next page)

1. Touch and select the G1P file which is to be converted to CSV file or Unidcode text file.
2. Touch the following button in accordance with destination file type.
   - CSV file : G1P->CSV button
   - Unicode text file : G1P->TXT button
3. Select the target folder.
   (Selecting a folder is not needed for outputting directly below the drive.)
4. If touch the Excute button, the dialog shown left is displayed.
   Touch the OK button.
   (While executing, "Processing..." message appears on the screen.)



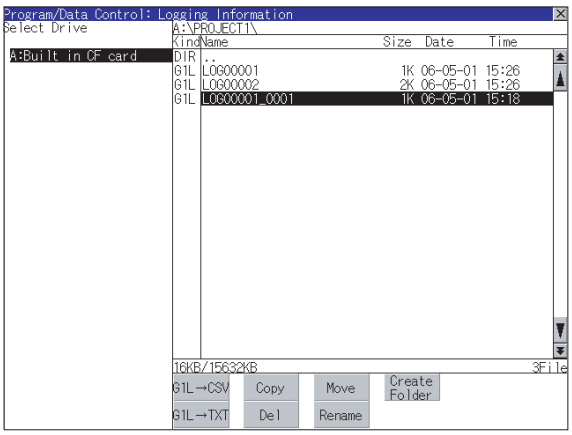
5 When the file, whose name is the same, exists in the destination folder, the dialog shown left appears without starting the conversion. If touch the [OK] button, overwrites the file.
If touch [Cancel] button, cancels the conversion.



6 The message of completion is displayed in dialogue when conversion is completed.
If touch [OK] button, the dialog is closed.

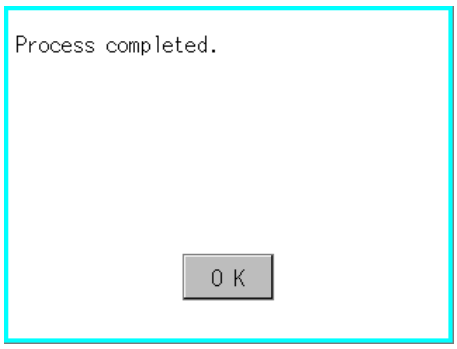
3 Delete operation

Folder and file to be used on advanced recipe are deleted.

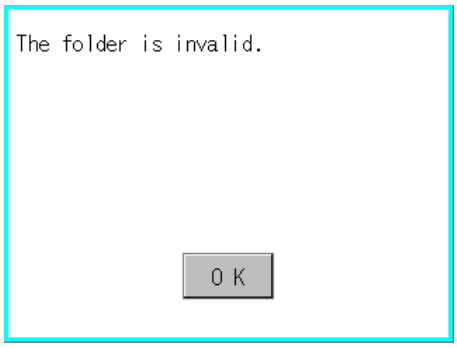


1 Touch and select the file/folder to delete.

2 If touch [Del] button, the dialog mentioned left is displayed.
If touch [OK] button, the file/folder is deleted.
(While executing, "Processing..." message appears on the screen.)
If touch [Cancel] button, the deletion is canceled.



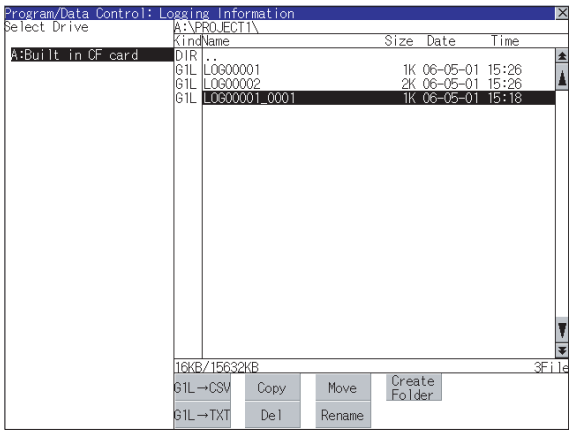
3 When the deletion is completed, the completion dialog is displayed.
If touch [OK] button, the dialog is closed.



4 When it cannot be deleted, the dialog showed at left appears. (Only when deleting folder is executed.)
Verify that there is no file in the folder and execute the delete operation again.
(☞ 13.7.5 Precautions)

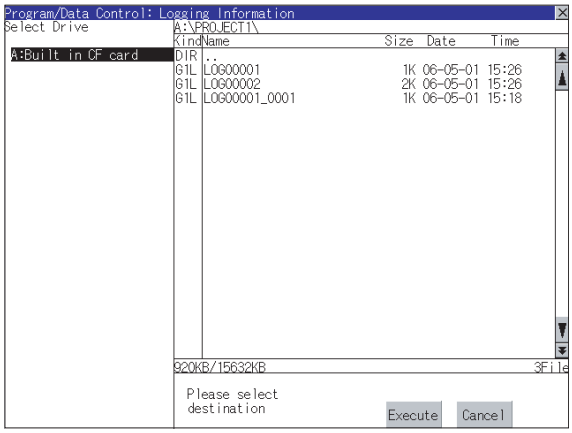
4 Copy operation

Folder to be used in advanced recipe is copied.



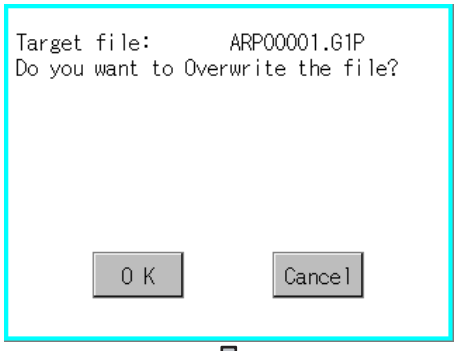
1 Touch and select the file to copy.

2 Touch the [Copy] button.



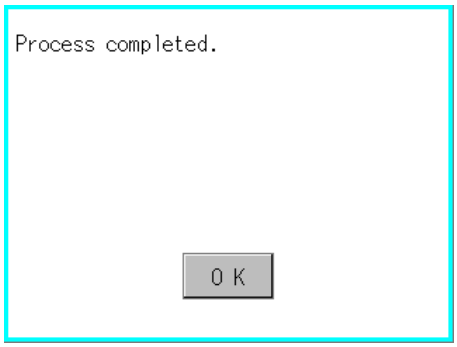
3 Select the target folder.
(Selecting a folder is not needed for outputting directly below the drive.)
At this time, it cannot be copied into the same folder where the file exists.
Select other folders.

4 If touch [Excute] button, the following dialog shown left is displayed.
Touch [OK] button.
(While executing, "Processing..." message appears on the screen.)



5 If there is a file of the same name in the copy destination folder, the following dialog is displayed without starting the copy.
If touch the [OK] button, overwrites the file.
If touch [Cancel] button, cancels to copy.

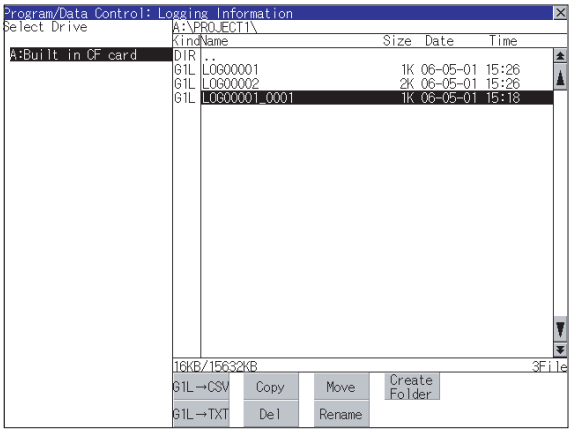
(Continued to next page)



6 When the copy is completed, the dialog of completion is displayed.
If touch [OK] button, closes the dialog.

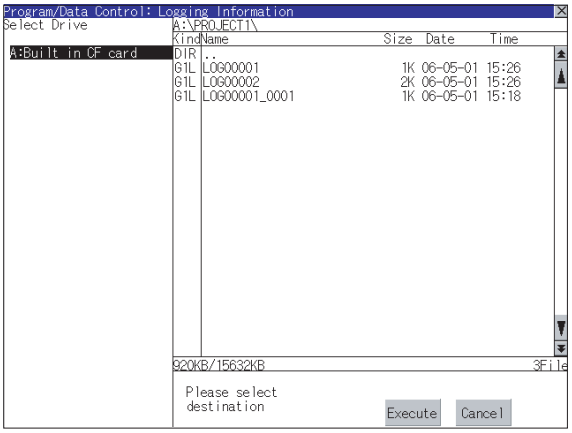
5 Move operation

Files to be used in advanced recipe are moved.



1 Select the file to be moved by touching it.

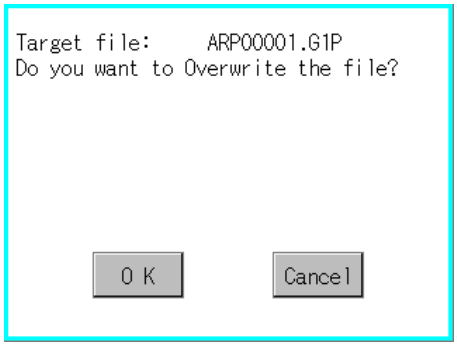
2 Touch the [Move] button.



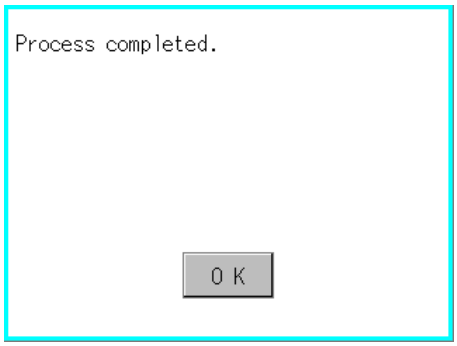
3 Select the target folder.
(Selecting a folder is not needed for moving directly below the drive.)

(Continued to next page)

4 If touch the Execute button, the dialog shown left is displayed.
Touch the OK button.
(While executing, "Processing..." message appears on the screen.)



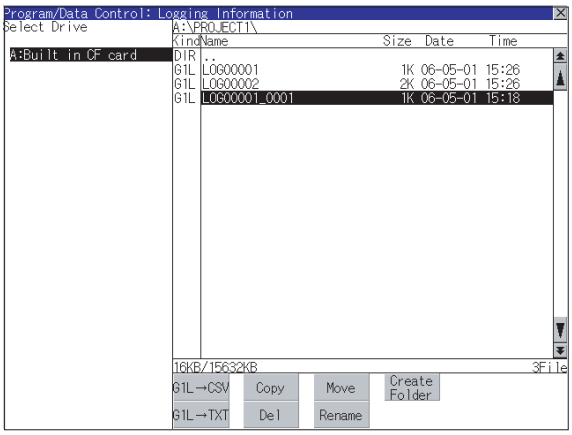
5 When any file with the same name exists in the destination folder, the dialog shown left appears without starting the movement.
Touching the OK button overwrites the file.
If touch the Cancel button, cancels moving.



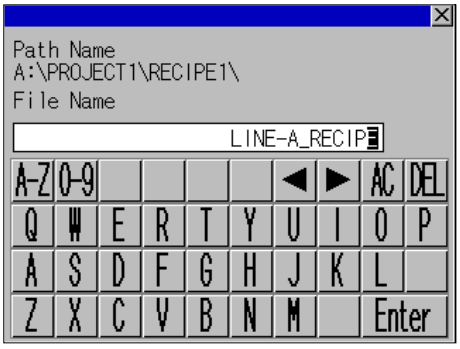
6 When moving is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

6 Rename operation

File name to be used in advanced recipe is changed.



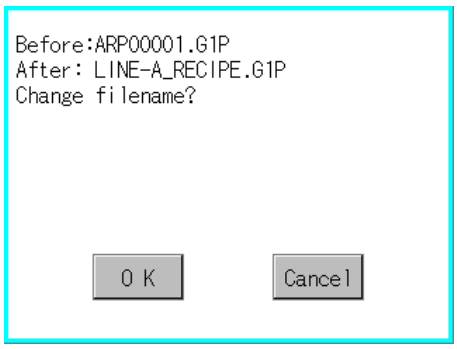
1 Select the file to be renamed by touching.



2 If touch the Rename button, displays the screen shown left, then input the file name to be renamed.
By touching the following button, input text type is changed.

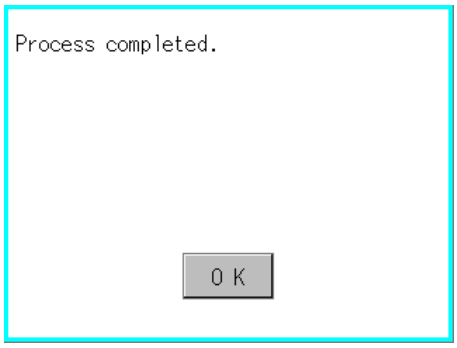
A-Z :English capital

0-9 :Numeric/Symbol



3 If touch the Enter button, displays the dialog shown left.

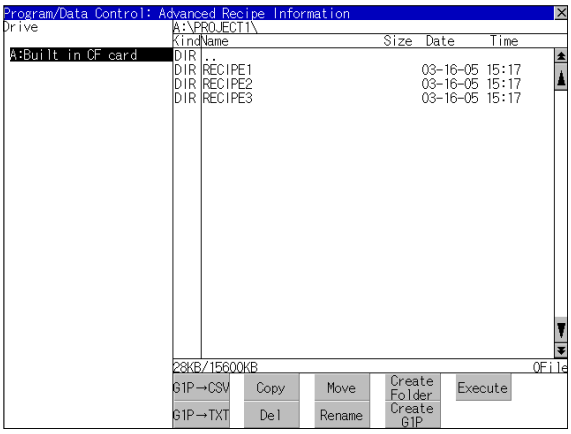
4 If touch the OK button, starts renaming file.
(While executing, "Processing..." message appears on the screen.)



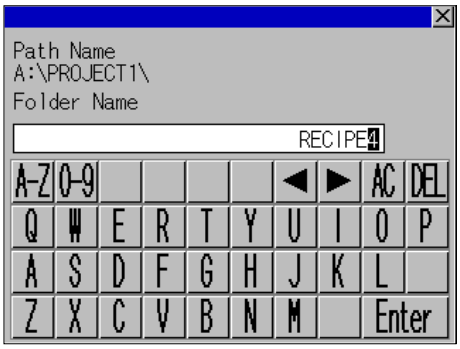
5 When renaming is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

7 Folder create operation

Folder to be used in advanced recipe is created.



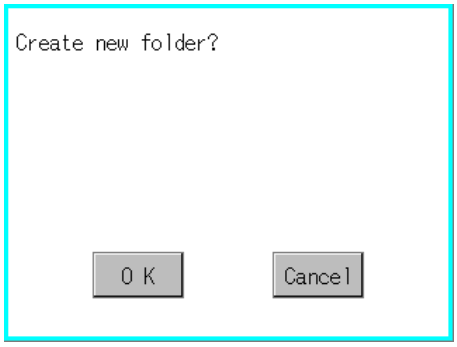
1 Touch the [Create Folder] button.



2 The input key window shown left appears, then input the file name to be created.
By touching the following button, input text type is changed.

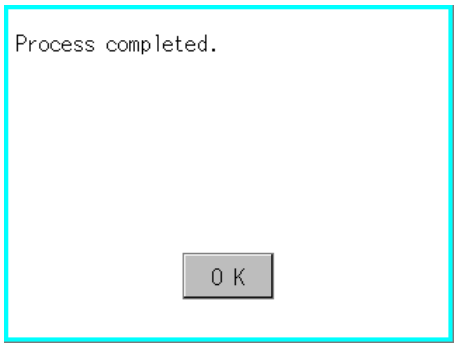
[A-Z] :English capital

[0-9] :Numeric/Symbol



3 If touch the [Enter] button, displays the dialog shown left.

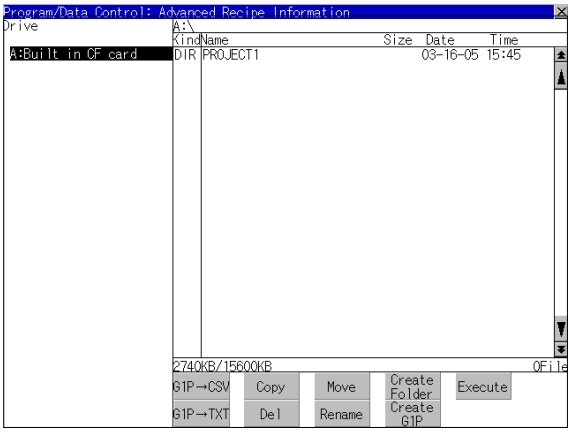
4 If touch the [OK] button, starts creating folder.



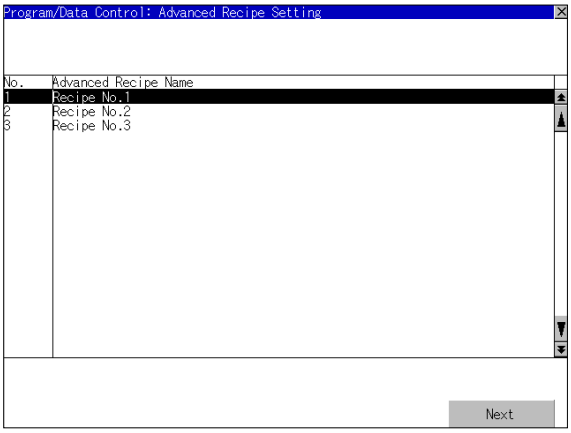
5 When creating folder is completed, completion dialog is displayed.
If touch the [OK] button, closes the dialog.

8 G1P file create operation

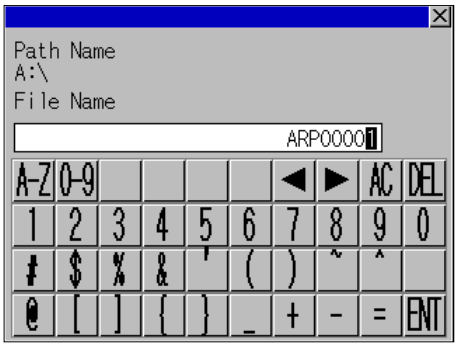
Advanced recipe file (G1P file) is created.
When advanced recipe is only executed on Utility, advanced recipe file should be created with this function in advance.



1 Touch the [Create G1P] button.



2 The screen to select the advanced recipe setting is displayed.
Select the advanced recipe setting to be used for new file.
After selecting, touch the [Next] button.

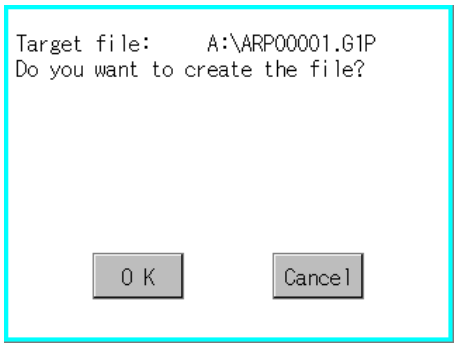


3 As the input key window is displayed, input the file name for new file.
By touching the following button, input text type is changed.

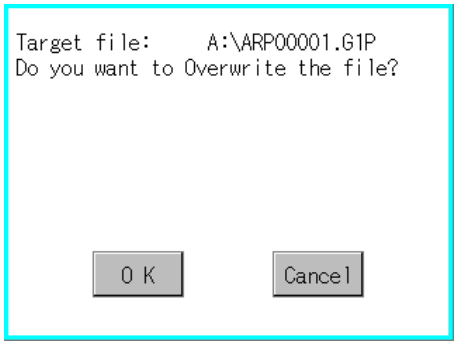
[A-Z] :English capital

[0-9] :Numeric/Symbol

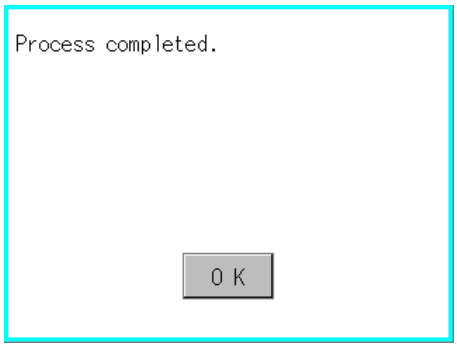
(Continued to next page)



4 If touch the Enter button, the dialog shown left is displayed.
Touch the OK button.



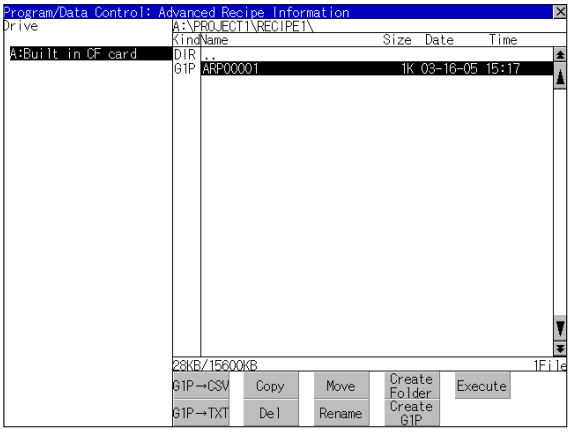
5 When the file, whose name is the same, exists in the destination folder, the dialog shown left appears without starting the creation.
Touching the OK button overwrites the file.
If touch the Cancel button, cancels creating.



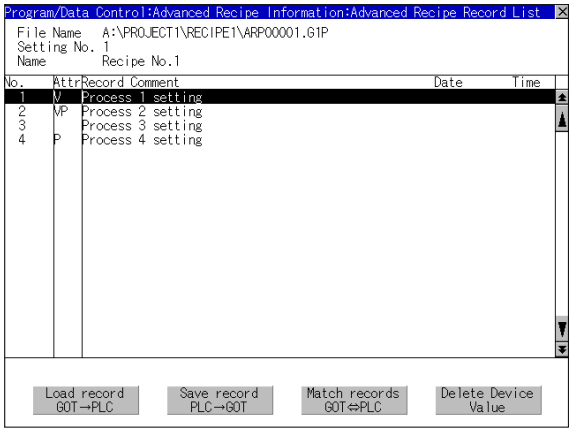
6 When creating is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

9 Record load operation

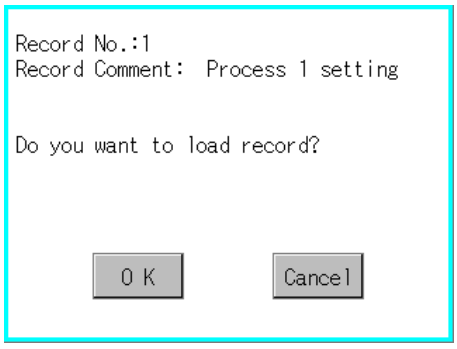
Selected record value is loaded in the device of controller.



1 Select the recipe file and touch the Excute button.

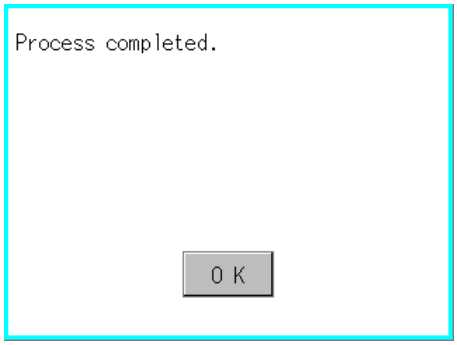

Program/Data Control:Advanced Recipe Information:Advanced Recipe Record List
File Name A:\PROJECT1\RECIPE1\ARP00001.G1P
Setting No. 1
Name Recipe No.1
No. Attr Record Comment Date Time
1 M Process 1 setting
2 MP Process 2 setting
3 Process 3 setting
4 P Process 4 setting
Load record GOT→PLC
Save record PLC→GOT
Match records GOT⇔PLC
Delete Device Value

2 As the Advanced Recipe Record List screen is displayed, select the record comment to which you want to load the device value.



3 If touch the Load record GOT→PLC button, the dialog shown left is displayed.

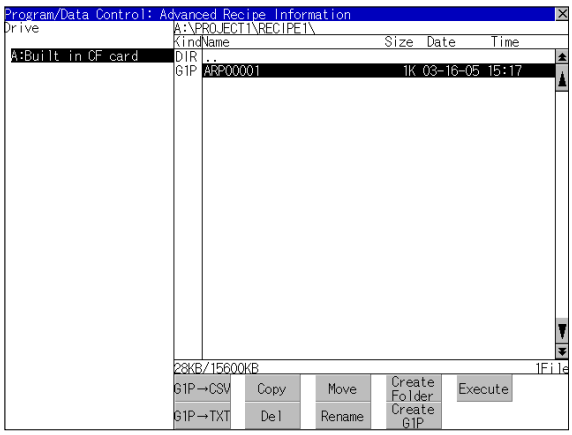
4 If touch the OK button, starts loading record.



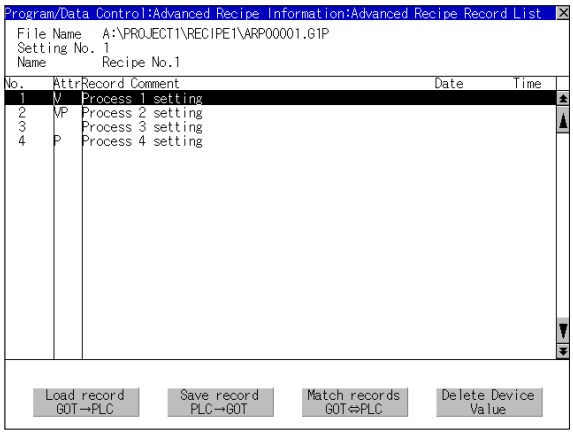
5 When loading is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

10 Record save operation

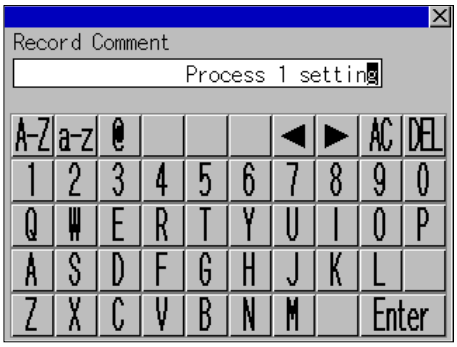
Device value of a controller is saved in the selected record.



1 Select the recipe file and touch the [Excute] button.


Program/Data Control:Advanced Recipe Information:Advanced Recipe Record List
File Name A:\PROJECT1\RECIPE1\ARP00001.G1P
Setting No. 1
Name Recipe No.1
No. Attr Record Comment Date Time
1 V Process 1 setting
2 VP Process 2 setting
3 Process 3 setting
4 P Process 4 setting
Load record GOT→PLC
Save record PLC→GOT
Match records GOT⇔PLC
Delete Device Value

2 As the Advanced Recipe Record List screen is displayed, select the record comment for saving the device value.



3 If touch the [Save record PLC→GOT] button, the screen shown left is displayed.
For changing the record comment of saving destination, input the record comment.
By touching the following button, input text type is changed.

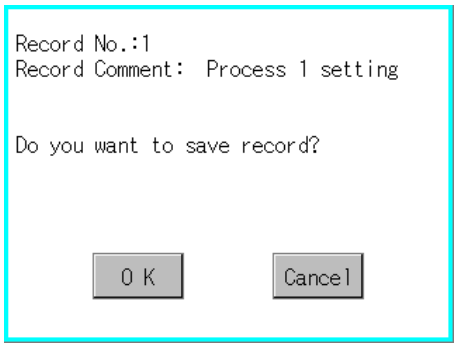
[A-Z] :English capital

[a-z] :English minuscule

[0-9] :Numeric/Symbol

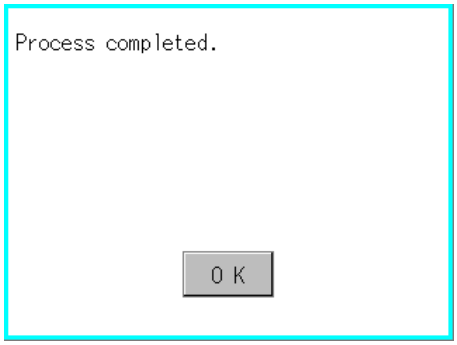
Other than alphanumeric and symbol can not be inputted.
If record comment is not changed, it is not need to input.

(Continued to next page)



4 If touch the Enter button, the dialog shown left is displayed.

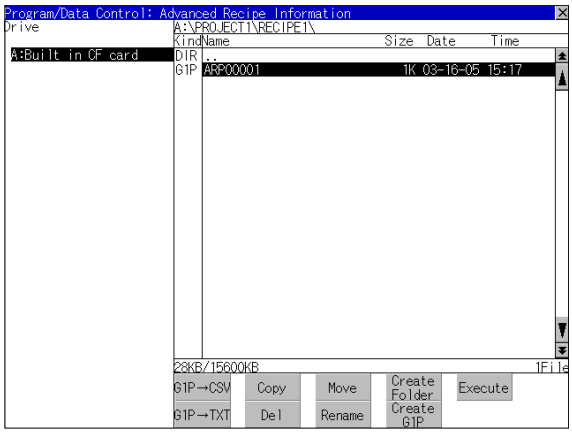
5 If touch the OK button, starts saving record.



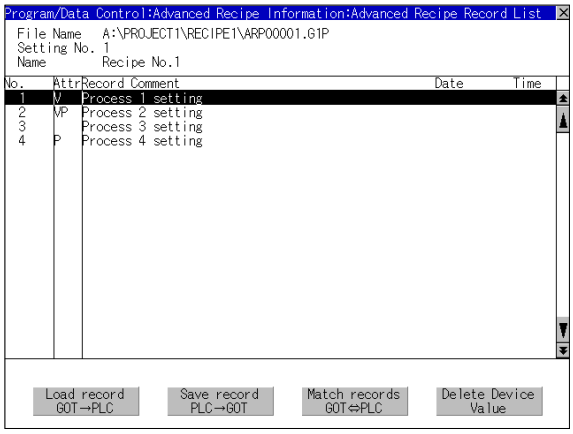
6 When saving is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

11 Record match operation

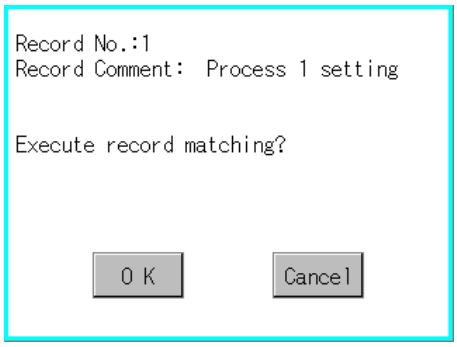
Verifies weather selected record matches to the device value of the controller.
After executing loading/saving with advanced recipe, verifies weather its contents are reflected.



1 Select the recipe file and touch the [Excute] button.


Program/Data Control:Advanced Recipe Information:Advanced Recipe Record List
File Name A:\PROJECT1\RECIPE1\ARP00001.G1P
Setting No. 1
Name Recipe No.1
No. Attr Record Comment Date Time
1 V Process 1 setting
2 VP Process 2 setting
3 Process 3 setting
4 P Process 4 setting
Load record GOT→PLC
Save record PLC→GOT
Match records GOT⇔PLC
Delete Device Value

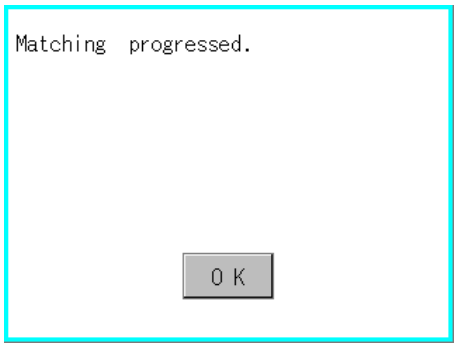
2 As the Advanced Recipe Record List screen is displayed, select the record comment for matching the device value.



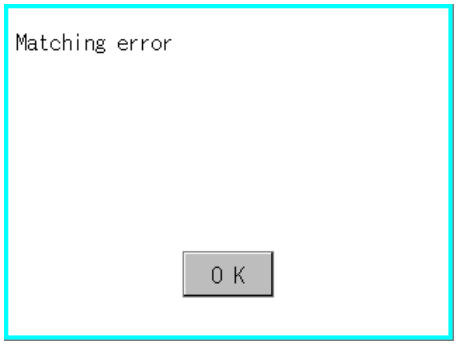
3 If touch the [Match records GOT↔PLC] button, dialog shown left is displayed.

4 If touch the [OK] button, starts matching record.

(Continued to the next page)



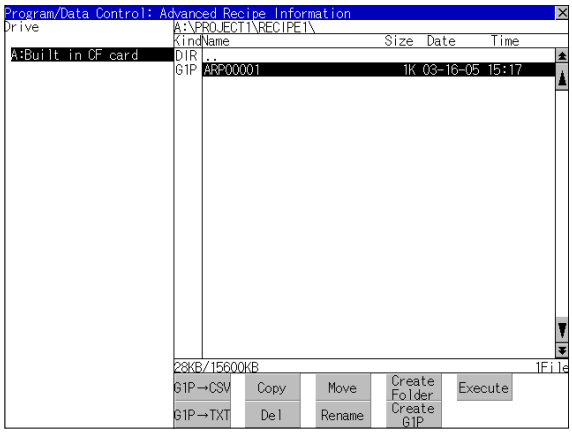
5 When matching is completed, completion dialog is displayed. If touch the OK button, closes the dialog.



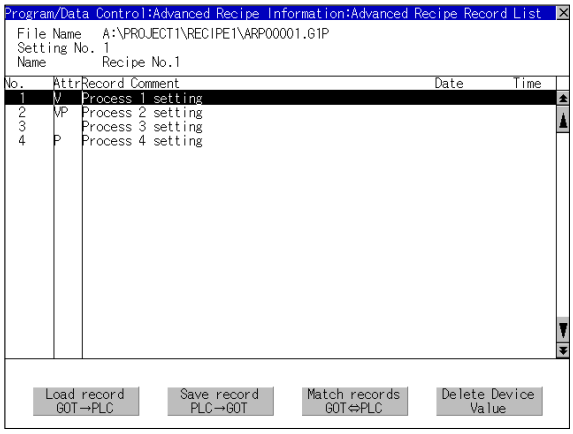
6 If selected record does not match to the device value of controller, the dialog shown left is displayed.

12 Device value delete operation

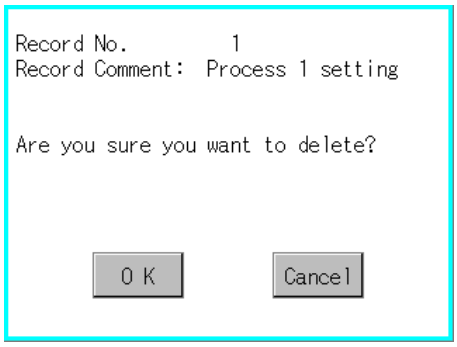
The device value of selected record is deleted (without value) and changed to record only for reading. (The record name is not deleted.)



1 Select the recipe file and touch the [Excute] button.

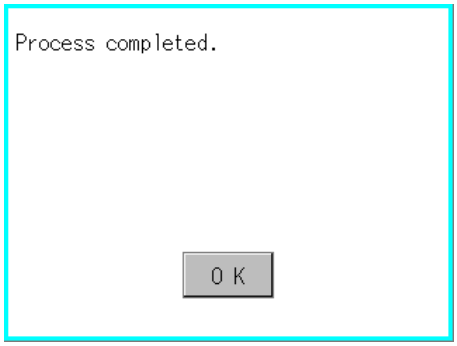

Program/Data Control:Advanced Recipe Information:Advanced Recipe Record List
File Name A:\PROJECT1\RECIPE1\ARP00001.G1P
Setting No. 1
Name Recipe No.1
No. Attr Record Comment Date Time
1 V Process 1 setting
2 VP Process 2 setting
3 Process 3 setting
4 P Process 4 setting
Load record GOT→PLC
Save record PLC→GOT
Match records GOT⇔PLC
Delete Device Value

2 As the Advanced Recipe Record List screen is displayed, select the record comment to be deleted.
(If the data of which attribution contains "P" can not be deleted.)



3 If touch the [Delete Dvice Value] button, the dialog shown left is displayed.

4 If touch the [OK] button, starts deleting device value.
(The "Processing..." message is displayed on the screen.)



5 When deleting is completed, completion dialog is displayed.
If touch the [OK] button, closes the dialog.

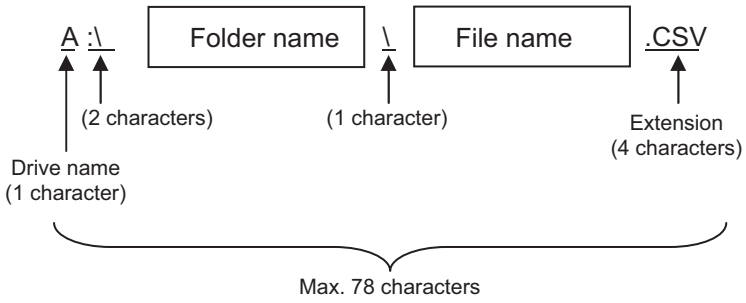
13.7.5 Precautions

1 Precautions for create/delete

(1) When creating folder/file

(a) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder/file name is automatically printed.)

Example, CSV file Path in memory card (for GT15)



Remark If folder is assigned the hierarchy.

The \ mark is displayed between folder name and folder name, folder name and file name.
The \ mark is also counted as one character.

(b) Character strings that cannot be set
The following character strings cannot be used as a folder name or a file name. Even small characters of those cannot be used.

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

In addition, the folder/file name showed below cannot be used.

- The folder name which begins with G1.
- Folder name and file name which begin with . (period).
- Folder name and file name which finish with . (period).
- Folder name and file name which have only . (one period) or ..(two periods).

(2) For deleting the folder
The folder in which the file exists cannot be deleted.
Delete the folder after having deleted the files.
In addition, on the advanced recipe information screen, the file other than that for advanced recipe is not displayed on GOT. When the folder, in which there is no file displayed on the screen, cannot be deleted, confirm whether there is other file in memory card by using personal computer, etc.

2 Precautions for operation

(1) Precautions during folder/file operation (Create/Delete/Copy/File output, etc)
Even if CF card access switch has been turned OFF while GOT is processing folders and files, the processing continues to be executed.
(Example: Even if CF card access switch has been turned OFF while GOT is creating a folder, the folder is created.)
Therefore, do not pull out the CF card while the "Processing..." message is on the screen after CF card access switch has been turned OFF.

(2) While GOT is accessing to other file (Alarm data, etc)
When folder/file processing for the advanced recip is excecuted while the GOT is in access to other file (CF card access LED ON), the GOT executes folder/file processing for the Advanced Recipe after the processing for other file has completed.
Therefore, it may take some time to finish the process of advanced recipe folder/file.
(The "Processing..." message is displayed on the screen.)

Remark

Estimation of processing time

The process may take time depending on the setting of advanced recipe file to be operated. (The more number of blocks increases, the longer it takes to process advanced recipe folder/file.)

(Reference value)
Direct connection to QCPU and CPU(device point:32767 points setting, transmission speed: 115200bps)

- When the block setting number to1: about 17 seconds
- When the block setting number to 2048: about 4 minutes

(3) For executing the saving/loading of device value with advanced recipe file which has been moved or whose name has been changed.
Adjust [Recipe File] setting of advanced recipe setting with GT Designer2 to file which has been moved or whose name has been changed.
After the setting has been changed, download the advanced recipe setting to GOT.

13.8 Logging Information

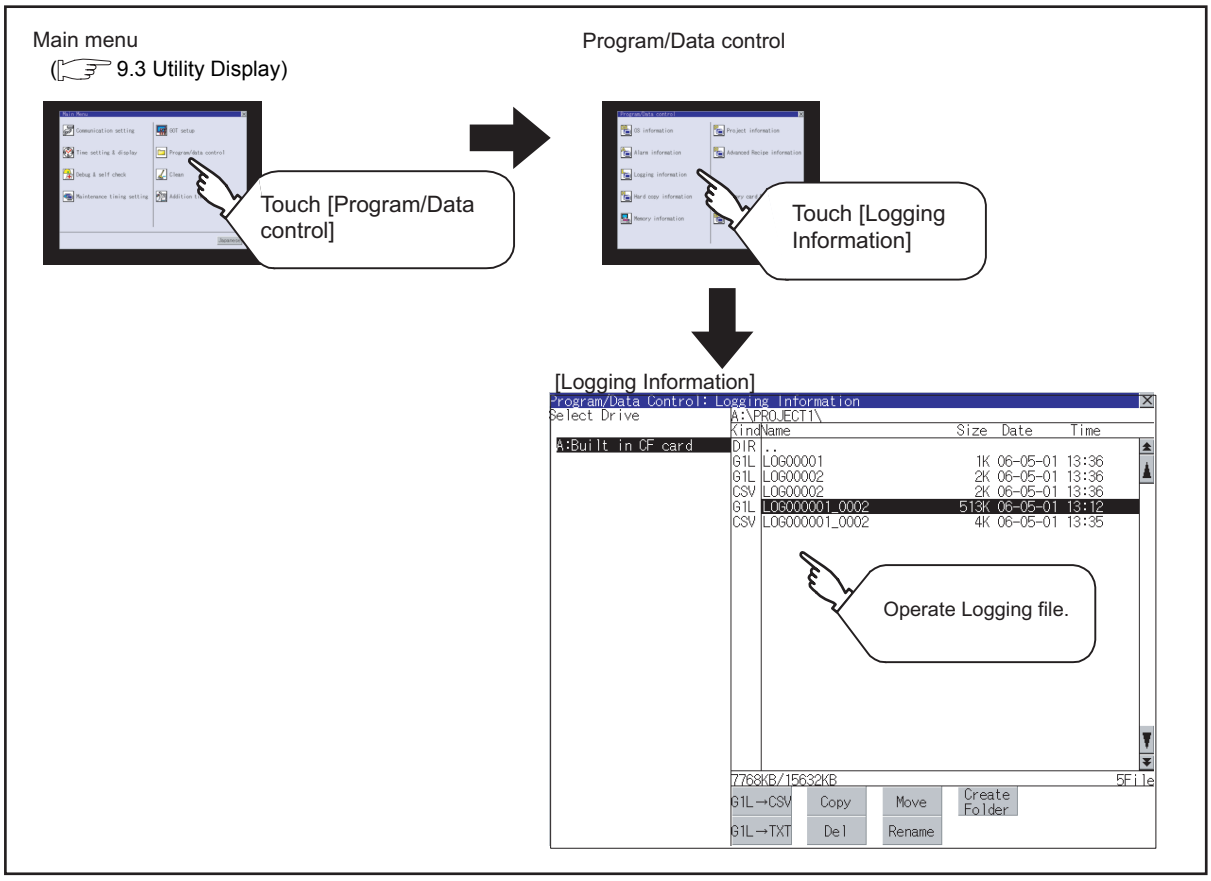
13.8.1 Function of logging information

Logging files created with the logging function can be copied, deleted or renamed, etc.
Without using a personal computer, you can manage logging files on the GOT.
For details of the logging function, refer to the following manual.

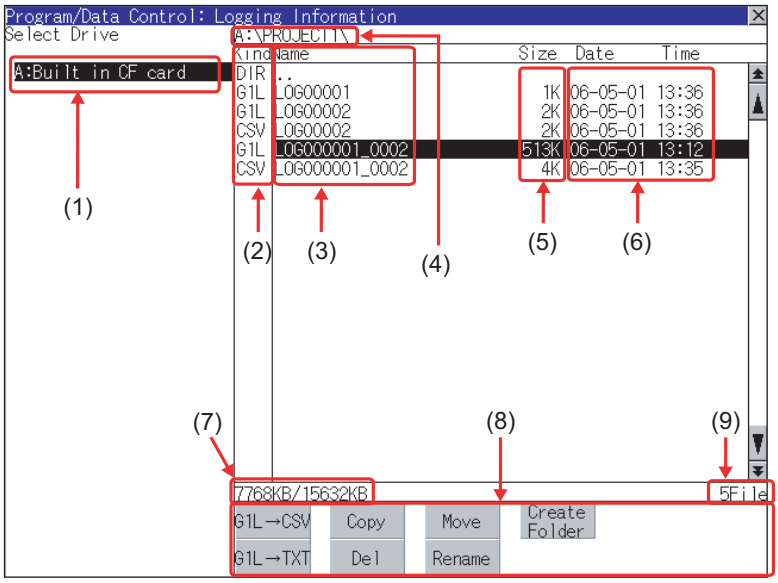
☞ GT Designer2 Version□ Screen Design Manual (11.3 Logging Function)

Function	Description	Refer to
Displaying file, folder data	The file/folder name, data size and creating date & time are displayed.	13-69,13-70
G1L → CSV conversion	G1L file of logging file is converted to CSV file.	13-71
G1L → TXT conversion	G1L file of logging file is converted to Unicode text file.	13-71
Del	File or folder is deleted.	13-73
Copy	File is copied.	13-74
Move	Folder is moved.	13-75
Rename	File name is changed.	13-77
Create Folder	New folder is created.	13-78

13.8.2 Display operation of logging information



13.8.3 Example of logging information display



Number	Item	Description
(1)	Drive	[A: Built-in CF card] is displayed. (Even if CF card is not installed, this message appears.)
(2)	Kind	Indicates whether the displayed name is file or folder. In case of file, displays the extension; in case of folder, displays "DIR".
(3)	Name	Displays the file name or folder name. For the long file/folder name, entire part may not be displayed. Confirm the nondisplayed part with the Rename button, etc. (☞ 13.8.4 6 Rename operation) After confirmation, touch the Cancel button to cancel the operation.
(4)	Path name	Displays the path name of drive/folder which is currently displayed.
(5)	Size	Displays the size of the file displayed in Name.
(6)	Creating date & time	The date and time when each file was created are displayed.
(7)	Drive size	Displays the used/entire size of drive selected by select drive.
(8)	Operation switch	Execution switch of each function.
(9)	Number of folders and files	Displays the total number of the displayed files and folders.

Point

About the displayed file

The files other than that for logging are not displayed on the logging information screen.

Remark

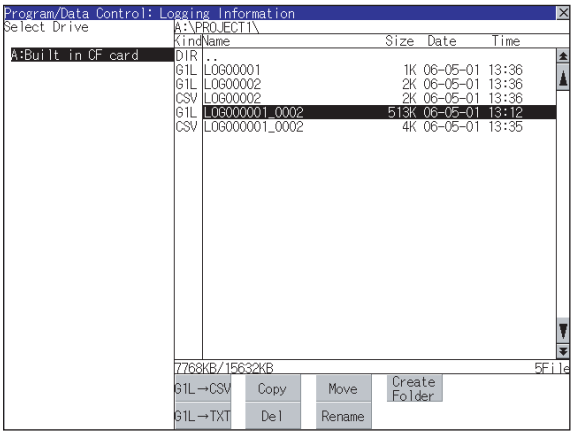
Folders and files displayed

Refer to the following for the details of folders and files displayed.

☞ 13.1.5 Display file

13.8.4 Logging information operation

1 Display operation of logging information



1 If touch a drive of select drive, the information of the touched drive is displayed.

2 If touch a folder name, the information of the touched folder is displayed.

3 If touch a folder of ". .", the information of the folder of the one upper hierarchy is displayed.

4 If touch ▲ ▼ button of the scrollbar, the screen scrolls up/down by one line.
If touch ⏫ ⏬ button, the screen scrolls up/down by one screen.

5 If touch a file name, the file is selected.

6 For operation of operating switches, refer to the following.

G1L → CSV ,

G1L → TXT ..... ☞ this section 2

Delete ..... ☞ this section 3

Copy ..... ☞ this section 4

Move ..... ☞ this section 5

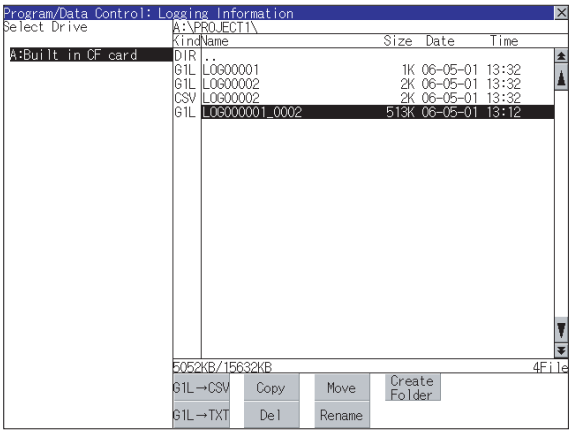
Rename ..... ☞ this section 6

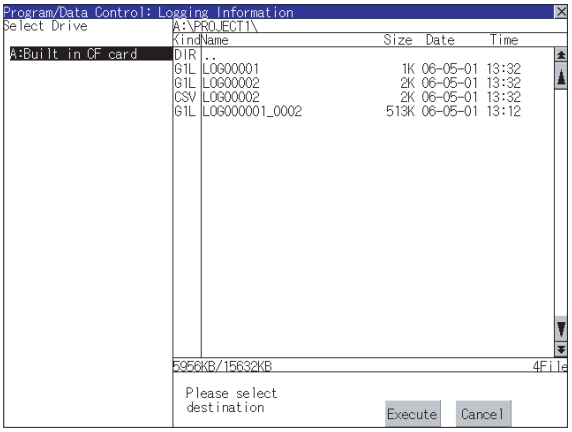
Create Folder ..... ☞ this section 7

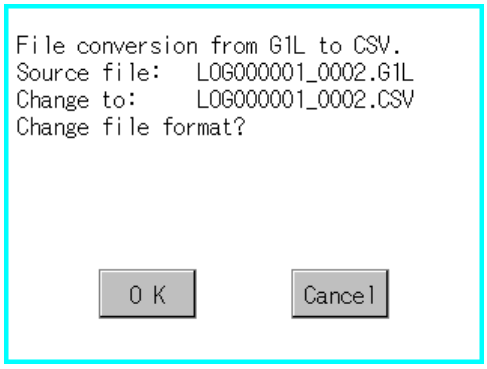
7 If touch ☒ button, the screen is closed.

2 Operation of G1L → CSV conversion G1L → TXT conversion

Logging file (G1L file) is converted to CSV file or Unicode text file that can be displayed/edited on personal computer.







(Example: Dialog if the G1L->CSV button is touched.)

(Continued to next page)

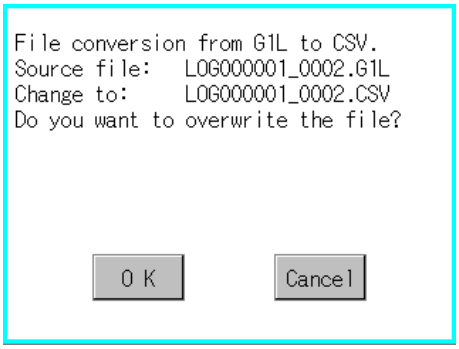
1 Touch and select the G1L file which is to be converted to CSV file or Unidcode text file.

2 Touch the following button in accordance with destination file type.

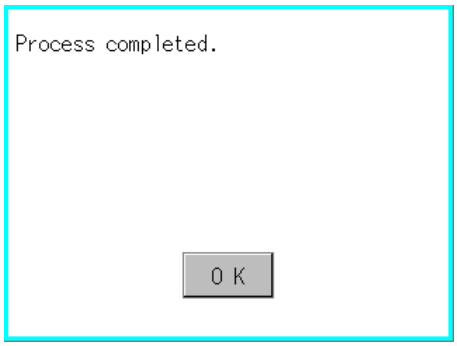
- CSV file : G1L->CSV button
- Unicode text file : G1L->TXT button

3 Select the target folder.
(Selecting a folder is not needed for outputting directly below the drive.)

4 If touch the Excute button, the dialog shown left is displayed.
Touch the OK button.
(While executing, "Processing..." message appears on the screen.)



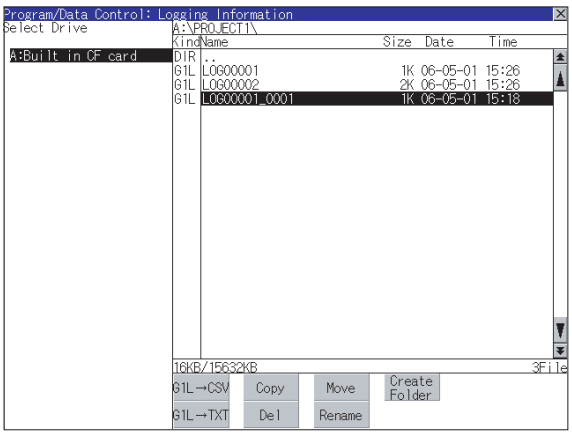
5 When the file, whose name is the same, exists in the destination folder, the dialog shown left appears without starting the conversion. If touch the OK button, overwrites the file.
If touch Cancel button, cancels the conversion.



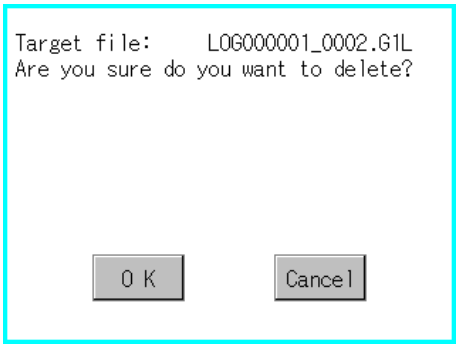
6 The message of completion is displayed in dialogue when conversion is completed.
If touch OK button, the dialog is closed.

3 Delete operation

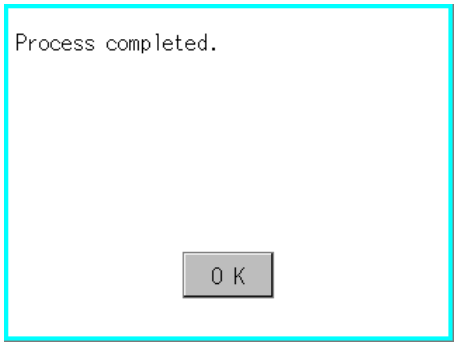
Folder and file to be used on logging are deleted.



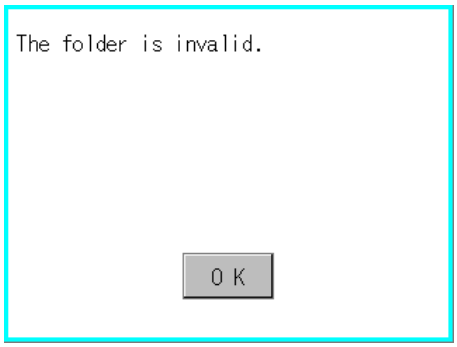
1 Touch and select the file/folder to delete.



2 If touch [Del] button, the dialog mentioned left is displayed.
If touch [OK] button, the file/folder is deleted.
(While executing, "Processing..." message appears on the screen.)
If touch [Cancel] button, the deletion is canceled.



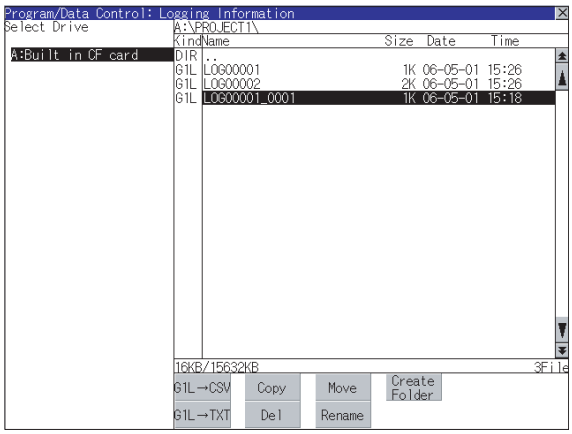
3 When the deletion is completed, the completion dialog is displayed.
If touch [OK] button, the dialog is closed.



4 When it cannot be deleted, the dialog showed at left appears. (Only when deleting folder is executed.)
Verify that there is no file in the folder and execute the delete operation again.
(☞ 13.8.5 Precautions)

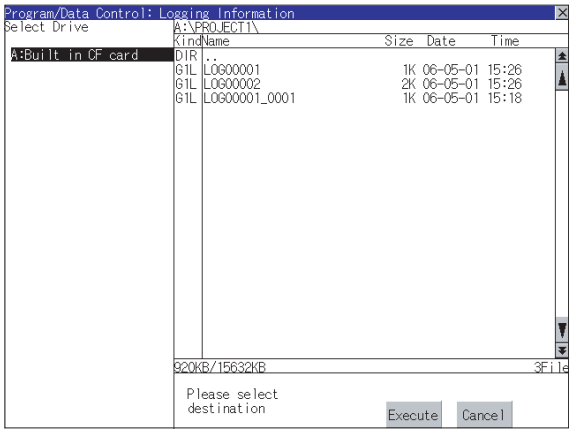
4 Copy operation

Folder to be used in logging is copied.

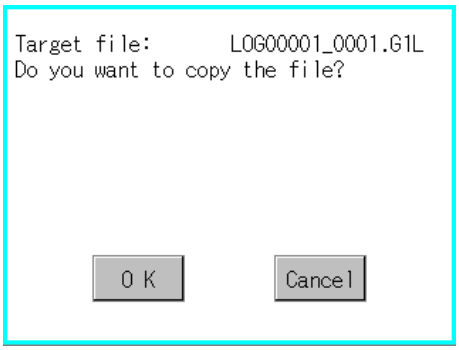


1 Touch and select the file to copy.

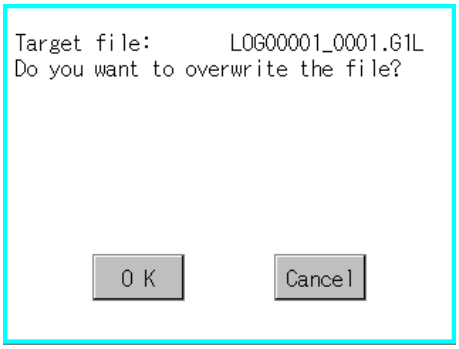
2 Touch the [Copy] button.



3 Select the target folder.
(Selecting a folder is not needed for outputting directly below the drive.)
At this time, it cannot be copied into the same folder where the file exists.
Select other folders.

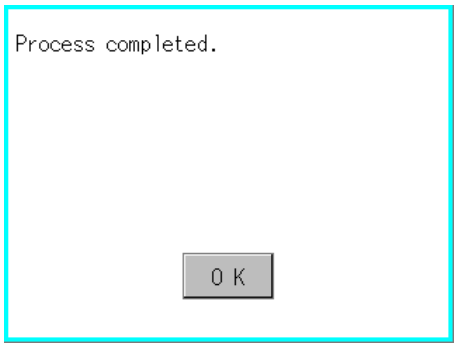


4 If touch [Excute] button, the following dialog shown left is displayed.
Touch [OK] button.
(While executing, "Processing..." message appears on the screen.)



5 If there is a file of the same name in the copy destination folder, the following dialog is displayed without starting the copy.
If touch the [OK] button, overwrites the file.
If touch [Cancel] button, cancels to copy.

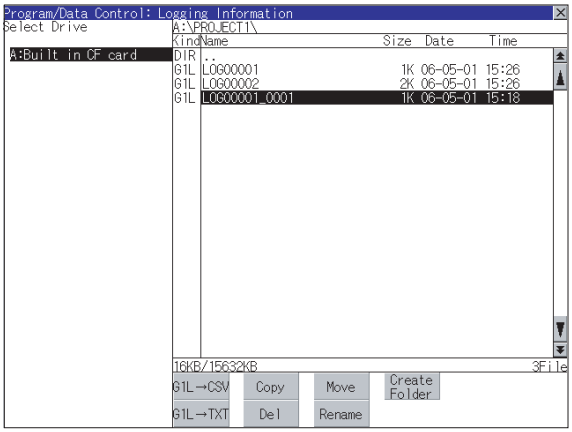
(Continued to next page)



6 When the copy is completed, the dialog of completion is displayed.
If touch [OK] button, closes the dialog.

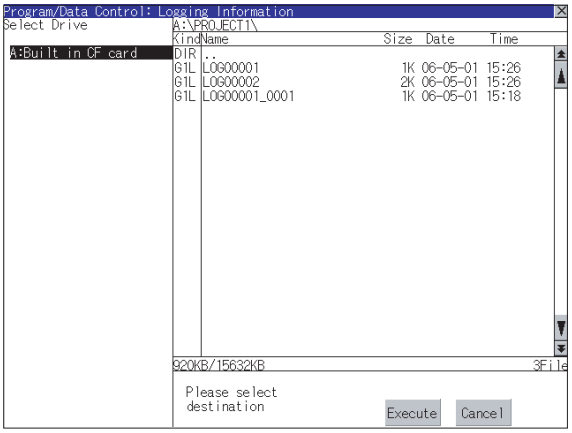
5 Move operation

Files to be used in logging are moved.



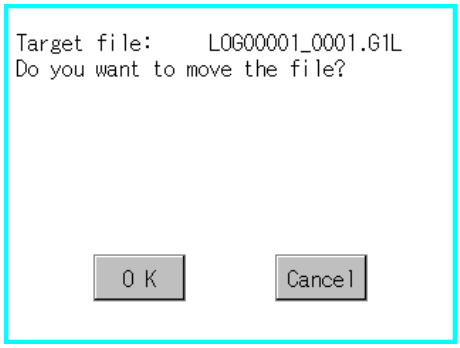
1 Select the file to be moved by touching it.

2 Touch the [Move] button.

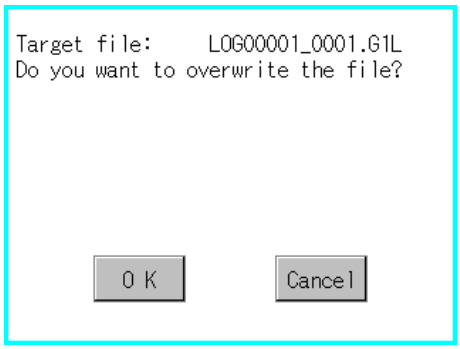


3 Select the target folder.
(Selecting a folder is not needed for moving directly below the drive.)

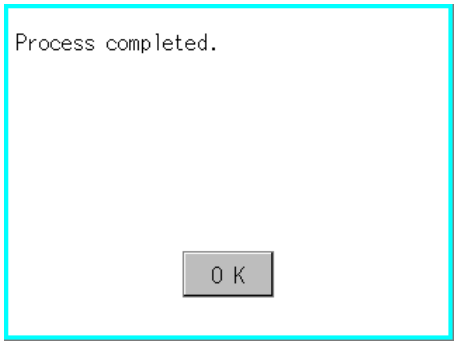
(Continued to next page)



4 If touch the Execute button, the dialog shown left is displayed.
Touch the OK button.
(While executing, "Processing..." message appears on the screen.)



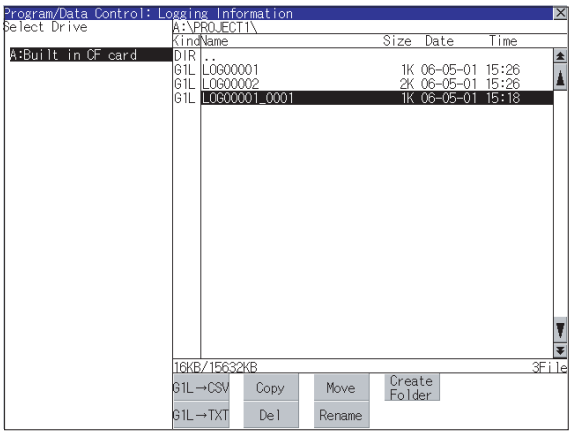
5 When only file with the same name exists in the destination folder, the dialog shown left appears without starting the movement.
Touching the OK button overwrites the file.
If touch the Cancel button, cancels moving.



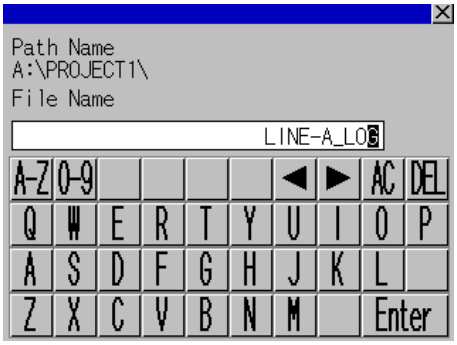
6 When moving is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

6 Rename operation

File name to be used in logging is changed.



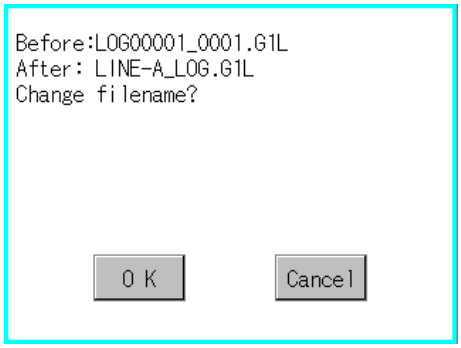
1 Select the file to be renamed by touching.



2 If touch the [Rename] button, displays the screen shown left, then input the file name to be renamed.
By touching the following button, input text type is changed.

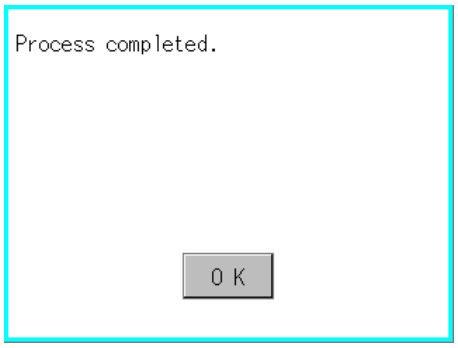
[A-Z]:English capital

[0-9]:Numeric/Symbol



3 If touch the [Enter] button, displays the dialog shown left.

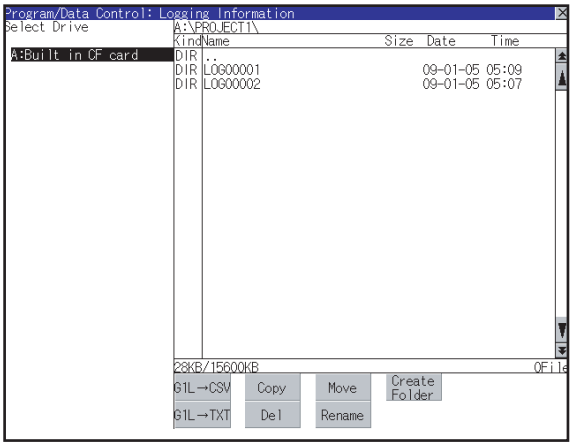
4 If touch the [OK] button, starts renaming file.
(While executing, "Processing..." message appears on the screen.)



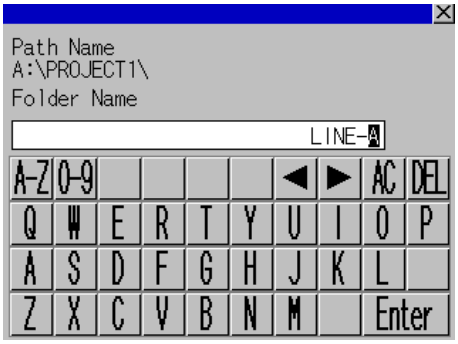
5 When renaming is completed, completion dialog is displayed.
If touch the [OK] button, closes the dialog.

7 Folder create operation

Folder to be used in logging is created.



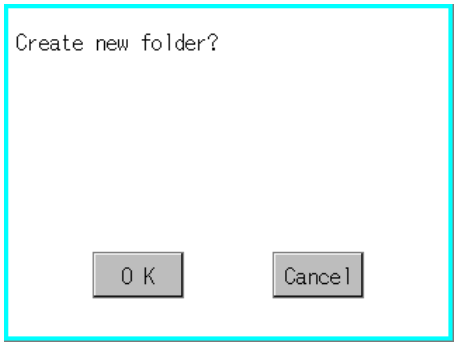
1 Touch the Create Folder button.



2 The input key window shown left appears, then input the file name to be created.
By touching the following button, input text type is changed.

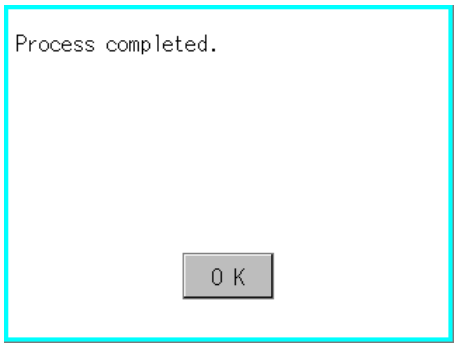
A-Z :English capital

0-9 :Numeric/Symbol



3 If touch the Enter button, displays the dialog shown left.

4 If touch the OK button, starts creating folder.



5 When creating folder is completed, completion dialog is displayed.
If touch the OK button, closes the dialog.

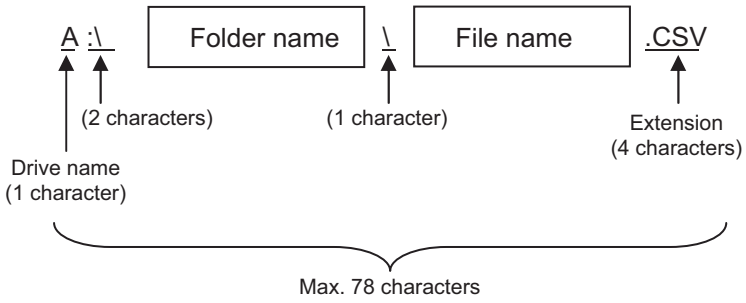
13.8.5 Precautions

1 Precautions for create/delete

(1) When creating folder/file

(a) Number of characters set for folder or file name.
GOT recognizes file location according to path explained below.
Specify folder or file name, and total characters of path cannot exceed 78 characters.
Users only can rename folder or file name.
(Other than folder/file name is automatically printed.)

Example, CSV file Path in memory card (for GT15)



Remark If folder is assigned the hierarchy.

The \ mark is displayed between folder name and folder name, folder name and file name.
The \ mark is also counted as one character.

(b) Character strings that cannot be set
The following character strings cannot be used as a folder name or a file name. Even small characters of those cannot be used.

- COM1 to COM9
- LPT1 to LPT9
- AUX
- CON
- NUL
- PRN
- CLOCK$

In addition, the folder/file name showed below cannot be used.

- The folder name which begins with G1.
- Folder name and file name which begin with . (period).
- Folder name and file name which finish with . (period).
- Folder name and file name which have only . (one period) or ..(two periods).

(2) For deleting the folder
The folder in which the file exists cannot be deleted.
Delete the folder after having deleted the files.
In addition, on the logging information screen, the file other than that for logging is not displayed on GOT. When the folder, in which there is no file displayed on the screen, cannot be deleted, confirm whether there is other file in memory card by using personal computer, etc.

2 Precautions for operation

(1) Precautions during folder/file operation (Create/Delete/Copy/File output, etc)
Even if CF card access switch has been turned OFF while GOT is processing folders and files, the processing continues to be executed.
(Example: Even if CF card access switch has been turned OFF while GOT is creating a folder, the folder is created.)
Therefore, do not pull out the CF card while the "Processing..." message is on the screen after CF card access switch has been turned OFF.

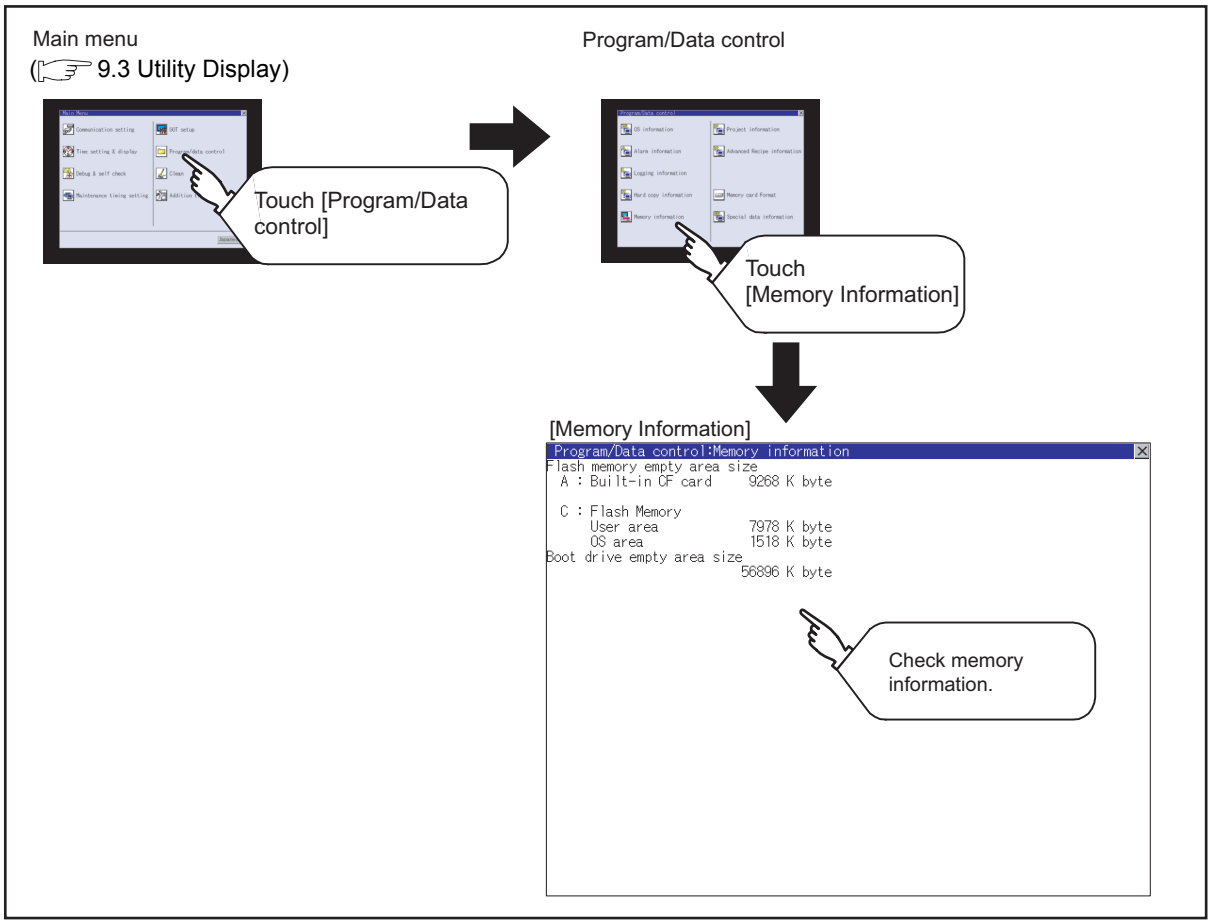
(2) While GOT is accessing to other file (Alarm data, etc)
When folder/file processing for the logging is excecuted while the GOT is in access to other file (CF card access LED ON), the GOT executes folder/file processing for the logging after the processing for other file has completed.
Therefore, it may take some time to finish the process of logging folder/file.
(The "Processing..." message is displayed on the screen.)

13.9 Memory Information

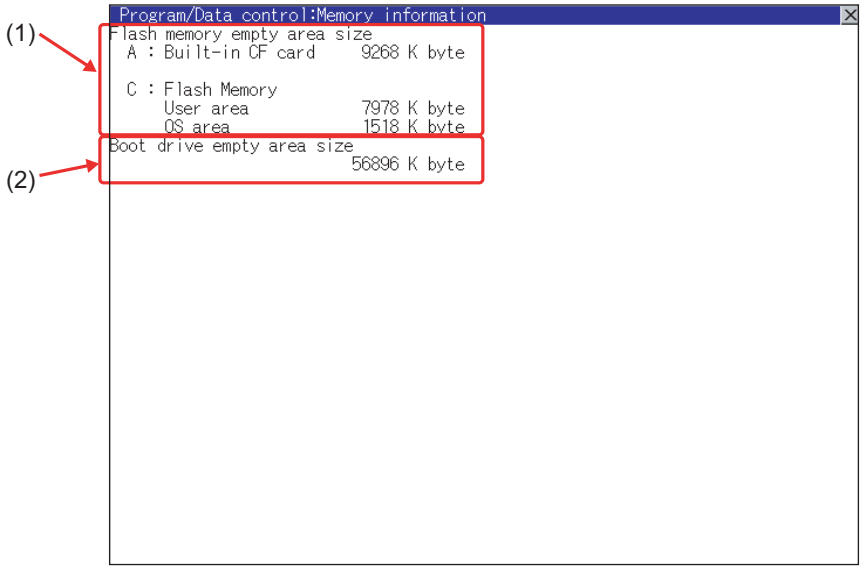
13.9.1 Memory information functions

Displays the flash memory empty area size available for the user of each drive and Boot drive empty area size.
Confirming memory empty space is enabled without connecting a personal computer.

13.9.2 Memory information display operation



13.9.3 Memory information display example


(1)
(2)
Program/Data control:Memory information
Flash memory empty area size
A : Built-in CF card 9268 K byte
C : Flash Memory
User area 7978 K byte
OS area 1518 K byte
Boot drive empty area size
56896 K byte

No.	Item	Description
(1)	Flash memory empty area size	Indicates the memory space of each drive available for the user to store files or folders. The [A: Standard CF Card] is not displayed when CF card is not installed.
(2)	Boot drive empty area size	Indicates the empty area size of boot drive specified by the user.

13.10 Special Data Information

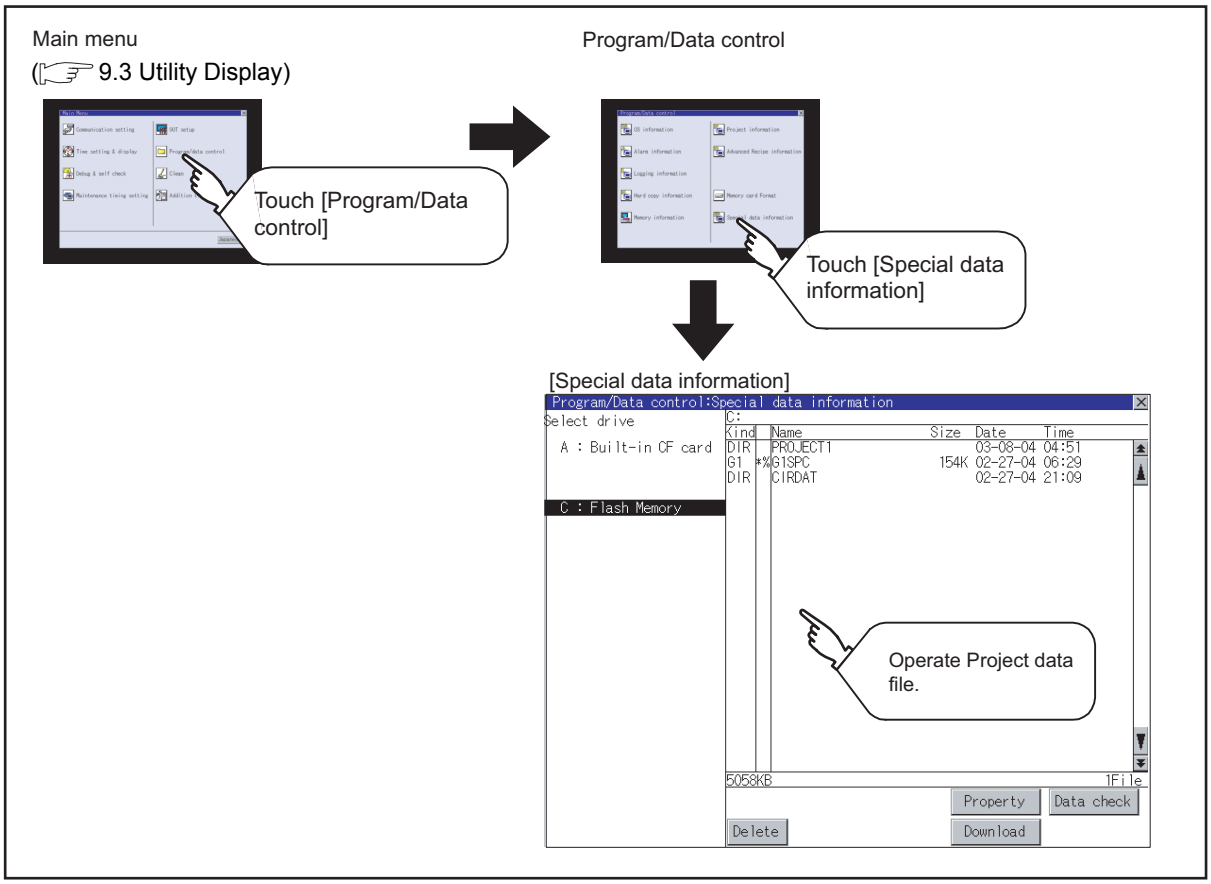
13.10.1 Special data information function

Special data used in the intelligent unit monitor function or others can be copied, deleted, downloaded, or uploaded.
For details of special data, refer to the following manual.

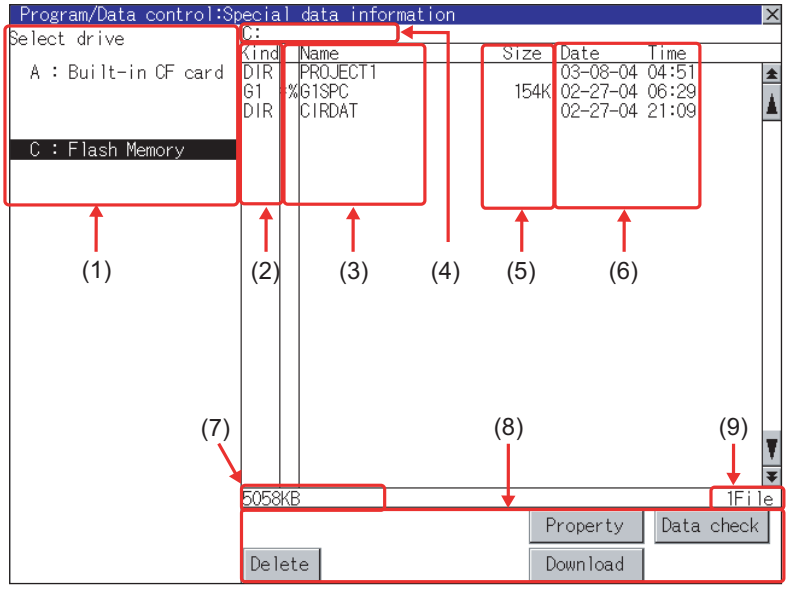
☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(8.1 Data Types and Sizes Transferred to the GOT)

Function	Description	Reference page
Information display of files and folders	Displays the name, data size, creation date and time of file or folder.	13-85
Delete	Deletes a file or holder.	13-86
Property	Displays the property of special data.	13-87
Data check	Copies a file.	13-88
Download	Downloads the special data written in the A drive (Standard CF Card) to the C drive (Built-in flash memory).	13-89

13.10.2 Special data information display operation



13.10.3 Special data information display example



Number	Item	Description
(1)	Select drive	The drive by which a file or folder is displayed can be selected. When the CF card is not installed, [A: Built-in CF card] is not displayed.
(2)	Kind	Indicates whether the displayed name is file or folder. In the case of file, displays the extension; in the case of folder, displays "DIR".
(3)	Name	Displays the name of special data in the selected drive. When the name exceeds 18 characters, the 19th and later characters are not displayed. The special data being monitored on the GOT is preceded by "*%".
(4)	Path name	Displays the path name of drive /folder which is currently displayed.
(5)	Size	Displays the size of the file displayed in Name.
(6)	Date and time	Displays the date and time when each file is installed.
(7)	The size of drive	Displays the size in use and the entire size of the drive which is selected by drive selection.(Only the size in use is displayed when selecting the C drive.)
(8)	Operation switch	Displays switch of each function executable in the Special data information (download, upload, etc.).
(9)	Number of folders and files	Displays the total number of displayed files and folders.

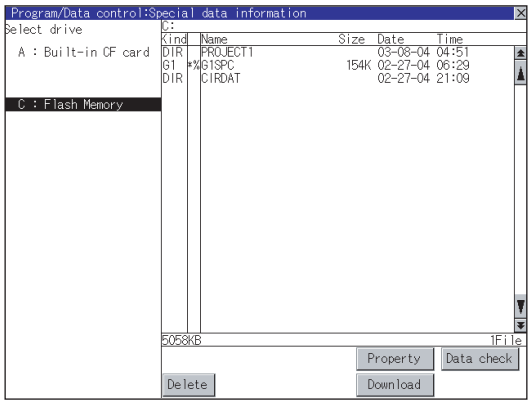
Remark Folders and files displayed

Refer to the following for the details of folders and files displayed

13.1.5 Display file

13.10.4 Special data information operation

1 Special data information display operation



1 If touch a drive in [Select drive], the special data in the drive is displayed.

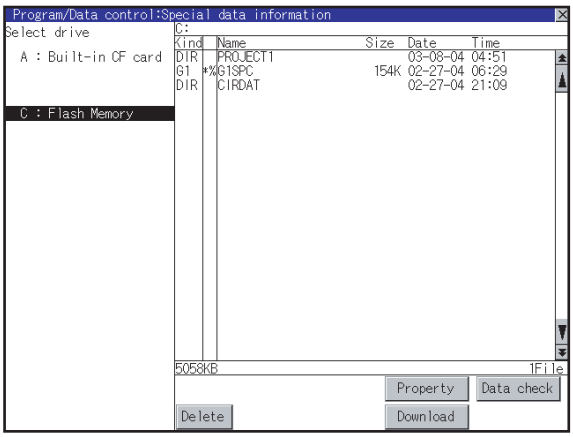
2 Refer to the following for operation of delete, property, data check and download.

- Delete.....☞ 1 in this section
- Property.....☞ 2 in this section
- Data check .....☞ 3 in this section
- Download..... .....☞ 4 in this section

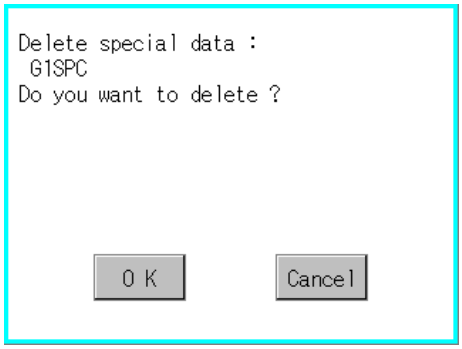
3 Touching the ☒ button closes the screen.

2 Delete operation

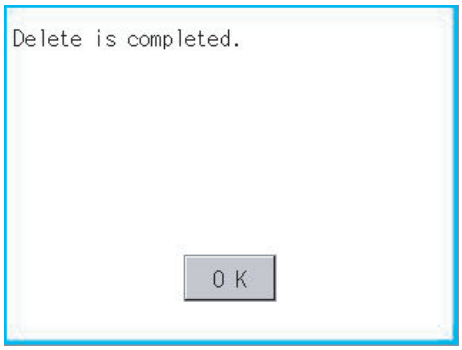
Deletes the selected file.



1 Touch and select the file to delete.



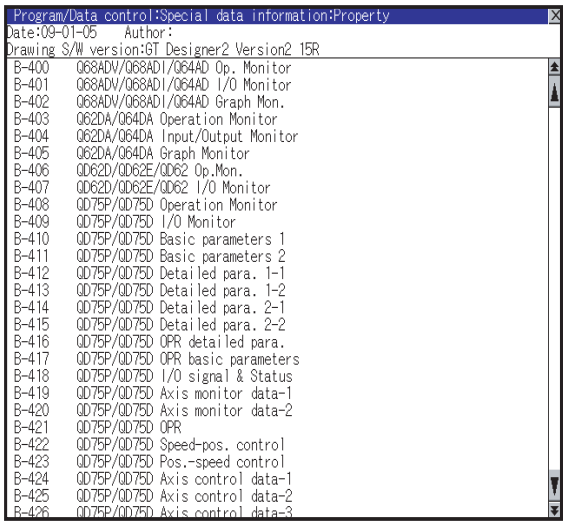
2 If touch the Delete button, the screen mentioned left is displayed.
Check if the deletion target file is specified correctly.
Touching the OK button deletes the file.
Touching the Cancel button cancels the deletion.



3 When the detection is completed, the dialog mentioned left is displayed.
If touch the OK button, the dialog is closed.

3 Property display operation

Displays the property of selected special data.


Program/Data control:Special data information:Property
Date:09-01-05 Author:
Drawing S/W version:GT Designer2 Version2 15R
B-400 Q68ADV/Q68ADI/Q64AD Op. Monitor
B-401 Q68ADV/Q68ADI/Q64AD I/O Monitor
B-402 Q68ADV/Q68ADI/Q64AD Graph Mon.
B-403 Q62DA/Q64DA Operation Monitor
B-404 Q62DA/Q64DA Input/Output Monitor
B-405 Q62DA/Q64DA Graph Monitor
B-406 QD62D/QD62E/QD62 Op.Mon.
B-407 QD62D/QD62E/QD62 I/O Monitor
B-408 QD75P/QD75D Operation Monitor
B-409 QD75P/QD75D I/O Monitor
B-410 QD75P/QD75D Basic parameters 1
B-411 QD75P/QD75D Basic parameters 2
B-412 QD75P/QD75D Detailed para. 1-1
B-413 QD75P/QD75D Detailed para. 1-2
B-414 QD75P/QD75D Detailed para. 2-1
B-415 QD75P/QD75D Detailed para. 2-2
B-416 QD75P/QD75D OPR detailed para.
B-417 QD75P/QD75D OPR basic parameters
B-418 QD75P/QD75D I/O signal & Status
B-419 QD75P/QD75D Axis monitor data-1
B-420 QD75P/QD75D Axis monitor data-2
B-421 QD75P/QD75D OPR
B-422 QD75P/QD75D Speed-pos. control
B-423 QD75P/QD75D Pos.-speed control
B-424 QD75P/QD75D Axis control data-1
B-425 QD75P/QD75D Axis control data-2
B-426 QD75P/QD75D Axis control data-3

1 Touch the [Property] button after selecting a special data to display Property as shown left.
In Property display, the following information is displayed.

Item	Description
Date	Displays date and time of file creation.
Author	Displays the author of the project data.
Drawing S/W version	Displays name and version of the drawing software by which the project is created.

2 If touch the [▲][▼] button, the screen scrolls up/down line by line.

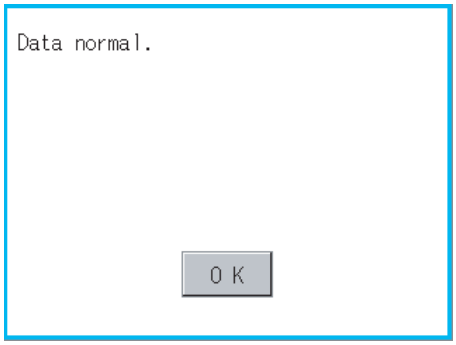
3 If touch the [⏫][⏬] button, screen scrolls up/down by one screen.

4 If touch the [×], the property display is closed and returned to the previous screen.

4 Data check operation

Checks the selected special data.

Dialog when data is normal



Dialog when data is error

1. Select a data check target file and touch the [Data check] button.
   The data check is executed and the result is displayed by the dialog shown left.
2. If touch the [OK] button the dialog is closed.

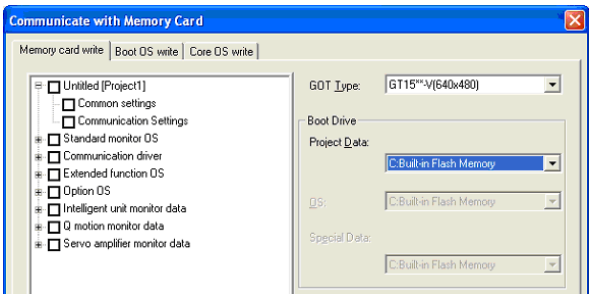
5 Download operation

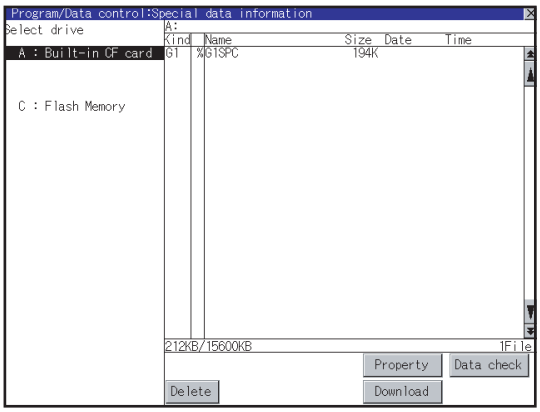
Transfers the special data written in the A drive (Standard CF Card) to the C drive (Built-in flash memory)

Point

Special data to be stored in a CF card

When storing the project data from GT Designer2 to CF card, select [C: Built-in flash memory] for [Project Data] in [Boot Drive].



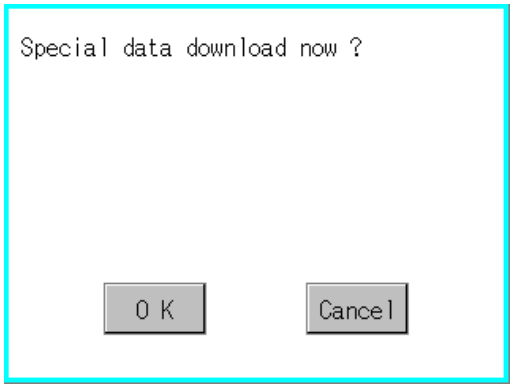


(Continued to next page)

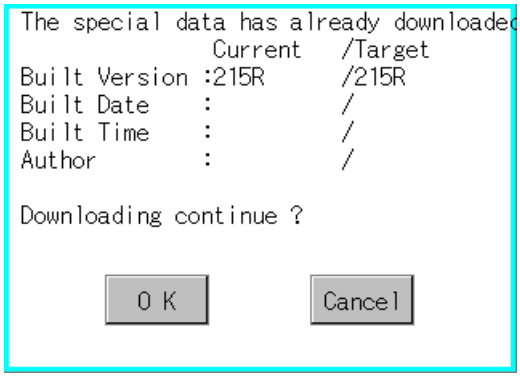
1 Install a CF card on the GOT
Refer to the following for inserting/ removing method of CF card.

8.1 CF Card

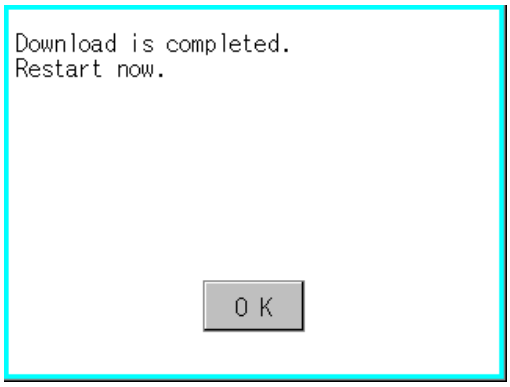
2 Touch [A: Standard CF Card] in Select drive.



3 If touch the Download button, the screen mentioned left is displayed. Downloading is executed when the OK button is touched.



4 If there is a project data of the same name in the C drive, the screen shown left is displayed.
If touch the OK button, the project data is downloaded and the project data in the C drive is overwritten. Downloading is canceled when the Cancel button is touched



5 When the downloading is completed, the dialog mentioned left is displayed.
Touching the OK button restarts the GOT.

14. GOT SELF CHECK (DEBUG & SELF CHECK)

The GOT can display the screen for debugging or self-checking.
The following describes the functions available as the debugging and self checking function.

Item	Description	Reference page
Debug	System monitor, Ladder monitor, A list editor, List editor for MELSEC-A, intelligent module monitor, Network monitor, Q motion monitor, servo amplifier monitor and CNC monitor	14-1
Self check	Memory check, Drawing check, Font check, Touch panel check, I/O check	14-3

14.1 Debug

In this manual, the overview of the debugging function and the operation procedure until displaying the screen are described.
For display contents and operation procedure of debuggings, refer to the following manual.

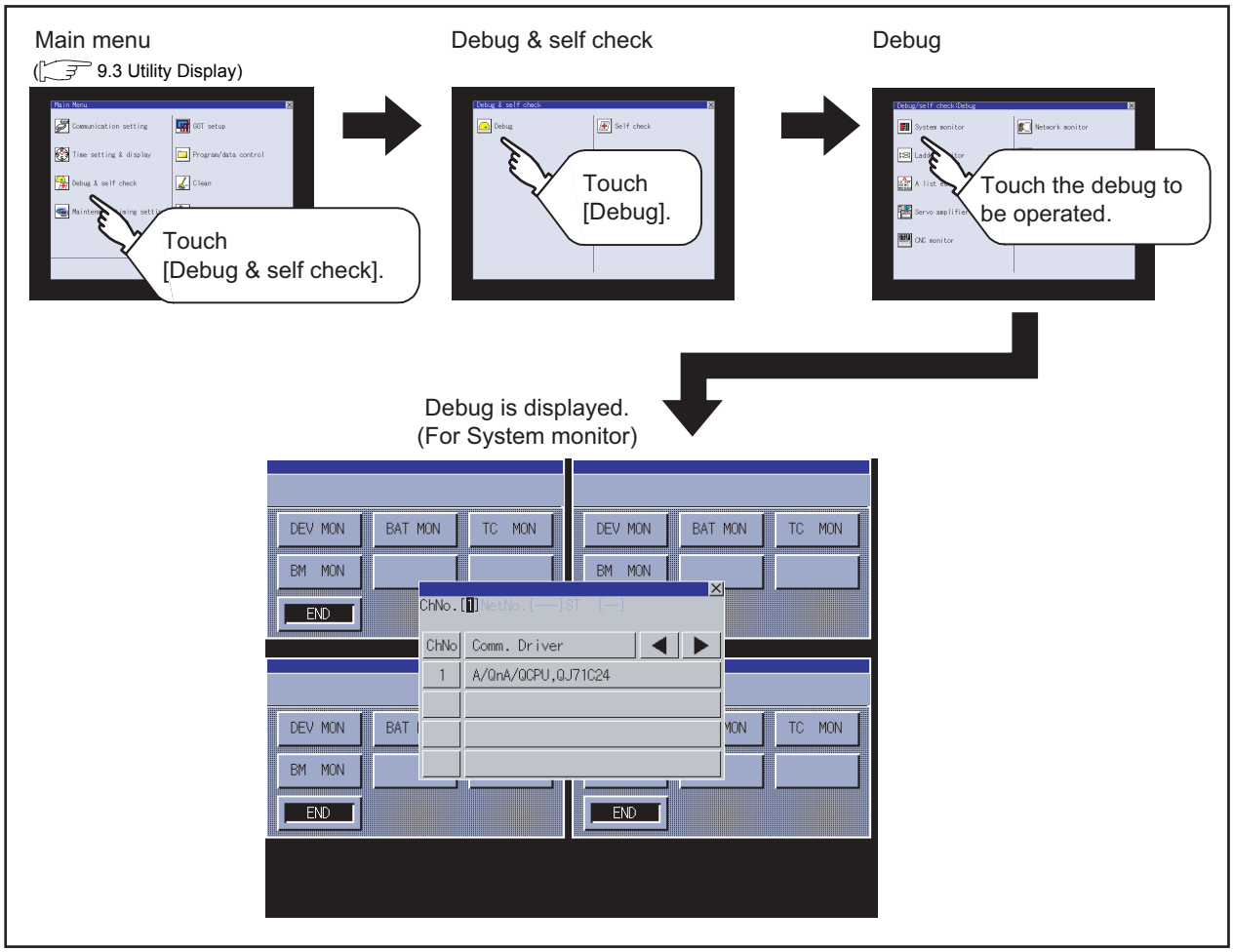
☞ GOT1000 Series Extended/Option Functions Manual

14.1.1 The Debug function

The Debug function is designed to confirm the device status of PLC CPU and to make the response for PLC system trouble more efficient.
The following shows the functions that can be performed with the Debug function.

Item	Description
System monitor	The device of PLC CPU and buffer memory of intelligent function module can be monitored or tested.
Ladder monitor	The program of PLC CPU can be monitored in ladder format.
A list editor	The sequence program of ACPU can be list edited.
FX list editor	The sequence program of FXCPU can be list edited.
Intelligent unit monitor	Buffer memory in the intelligent function module can be monitored or the data can be changed on the dedicated screen. And the signal status of I/O modules can be monitored.
Network monitor	The network status of the MELSECNET/H, MELSECNET/10, MELSECNET(II), and MELSECNET/B can be monitored.
Motion monitor	The servo monitoring and parameter settings of the motion controller CPU (Q series) are available.
Servo amplifier monitor	Various monitor functions, parameter change, test operation, etc. of the servo amplifier are available.
CNC monitor	Functions equivalent to the MELDAS dedicated display, such as Position Display Monitor, Alarm Diagnosis Monitor, Tool Offset/Param, and Program Monitor, are available.

14.1.2 Display operation of Debug



14.2 Self check

14.2.1 Self check function

Carries out self-check of screen data or memory etc. The items which can be self-checked are as follows.

Items	Description	Reference page
Memory check	Carries out write/read check of the memory card and built-in flash memory [Password] 5 9 2 0	14-4
Drawing Check	Carries out missing bit check, color check and drawing check.	14-7
Font check	Displays the character data on the screen to check visually.	14-12
Touch panel Check	Checks whether there are no dead zone area in the Touch key minimum unit (16 dots x 16 dots).	14-14
I/O check	Carries out RS-232 connecting target confirmation and self-loopback check.	14-16

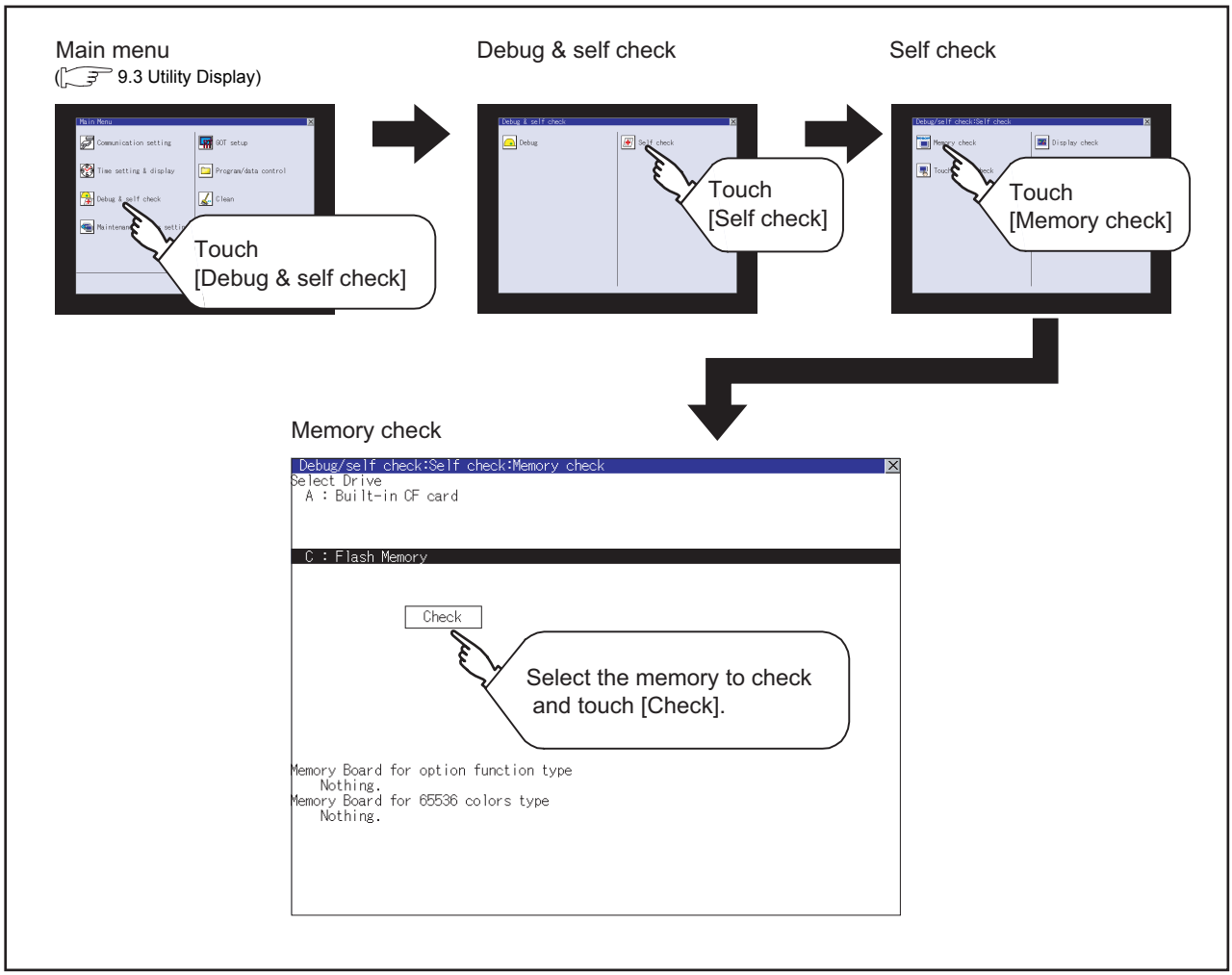
14.3 Memory Check

14.3.1 Memory check function

Memory check function carries out the write/read check of A drive (Built-in CF card) and C drive (Built-in flash memory)

Function	Description
A drive memory check	Checks whether the memory (CF card) of the A drive can be read/written normally.
C drive memory check	Checks whether the memory (Built-in flash memory) of the C drive can be read/written normally.

14.3.2 Display operation of memory check



Remark Mounting condition of optional devices (board)

The mounting status of option function board and multi-color display board is displayed on the lower left of the memory check screen.

When mounted : The model numbers of the mounted option function board and multi-color display board are displayed.

When not mounted : "None" is displayed.

14.3.3 Memory check operation

Carries out write/read check of memory.

Point

When drive is not displayed

When the drive (memory) to check is not displayed, confirm the mounting procedure or memory type with reference to the following.

- CF card inserting/removing method (☞ 8.1 CF Card)

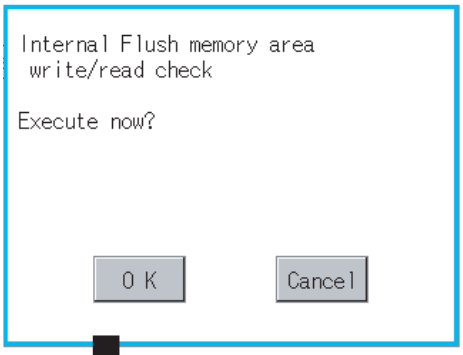
When no faults are found in mounting, etc, a memory failure may be arosen.
Replace the memory card or built-in flash memory (C drive).
For details of built-in flash memory, contact your local Mitsubishi (Electric System) Service.

The following example explains about Memory Check using built-in flash memory (C drive).
For the Bulit-in CF card (A drive) memory check, install the CF card before carrying out the same key operations as built-in flash memory.

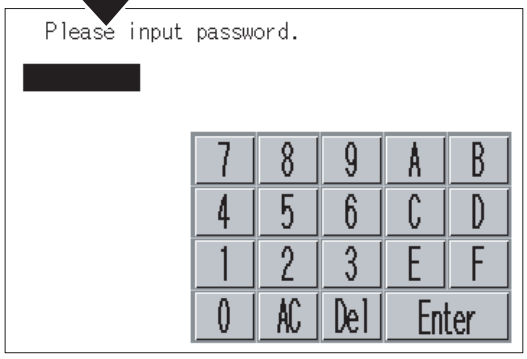
1. Select [Flash Memory] in the Memory check setting screen.

   If select [OK] button, the numeric keyboard window is displayed.

   If select [Cancel] button, returns to the initial menu.



2. Touch to input password ([5][9][2][0]) and touch [Enter].
   If touch [Enter],executes read/write check for the built-in flash memory, which is completed in around 10 seconds.

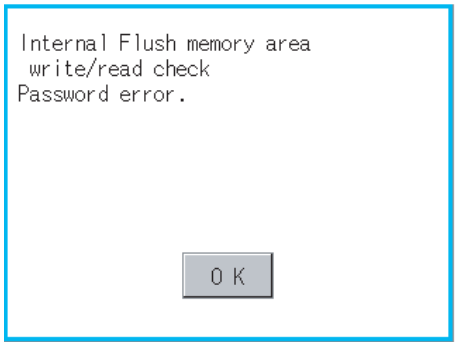


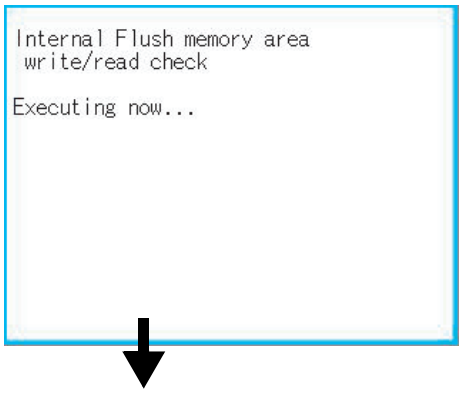
Remark

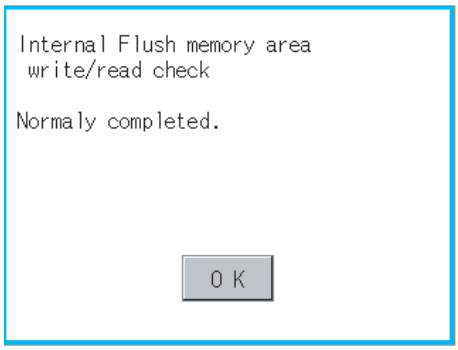
Password change

The password cannot be changed.
When input password error, the cancel dialog is displayed.

If touch [OK], returns to the Memory check screen.





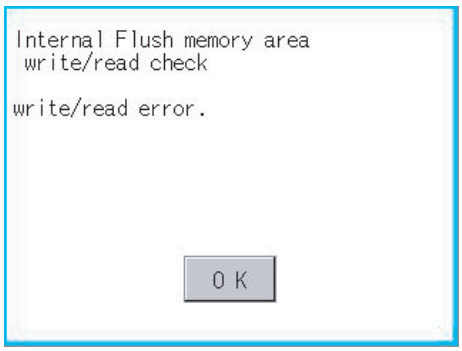


Point

When error is found in memory

When error is found by memory check, the dialog indicating the area in which the error occurred is displayed.
In case of error, contact your local Mitsubishi (Electric System) Service.

If touch [OK], returns to the Memory check screen.

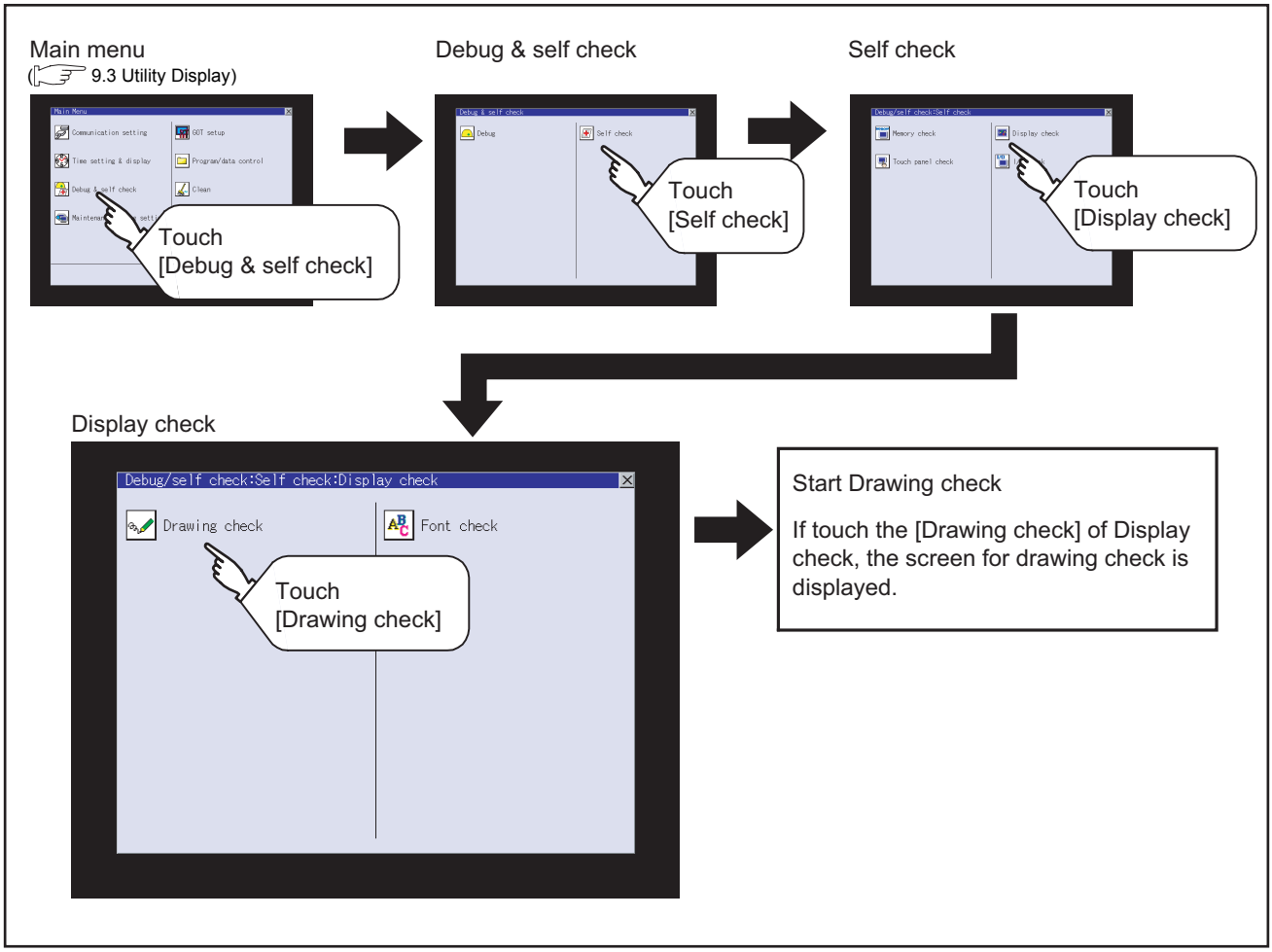


14.4 Drawing Check

14.4.1 Drawing check function

The drawing check function carries out display checks as missing bit check, color check, basic figure display check, move check among screens.

14.4.2 Display operation of drawing check



Point Notes on drawing check

Missing bits is occurred in the following cases.

1. There are parts drawn in different color with the filled color.
2. There are parts of basic figure and drawing patterns which are not drawn according to the layout and procedures described in "Section 13.3.3 Display and Operation of Drawing Check".

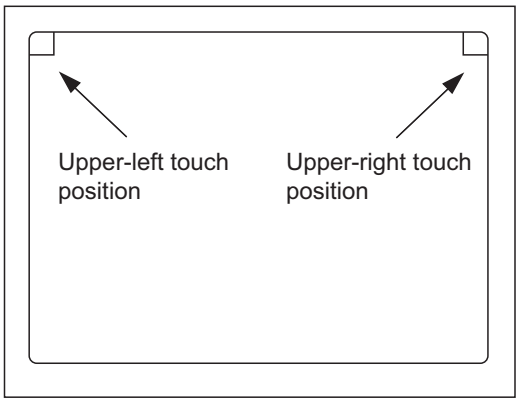
When missing bits occurs, contact your local Mitsubishi (Electric System) Service.

14.4.3 Drawing check operation

The screen for drawing check can be displayed by touching [Drawing check] on the Display check menu.

1 Before execute drawing check

Touching the upper right part of the screen proceeds to the next check in each step during drawing check.
Touching the upper left part of the screen returns to the [Display check] screen.

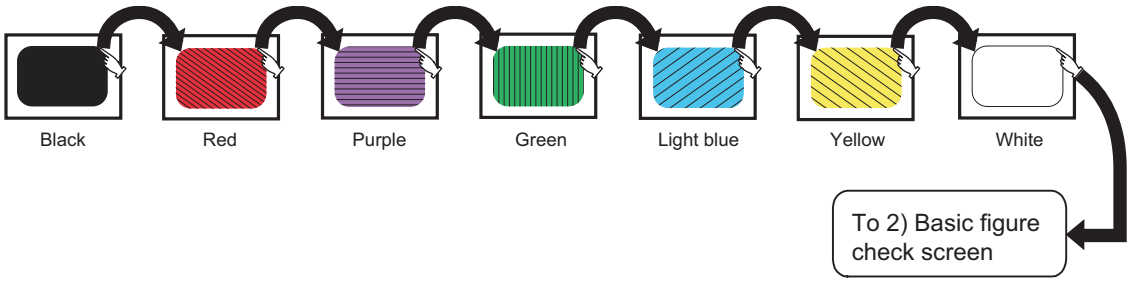


1 Missing bit, Color Check

By touching the upper-right part of the screen, the entire screen color changes in the following order:

black → red → purple → green → light blue → yellow → white.

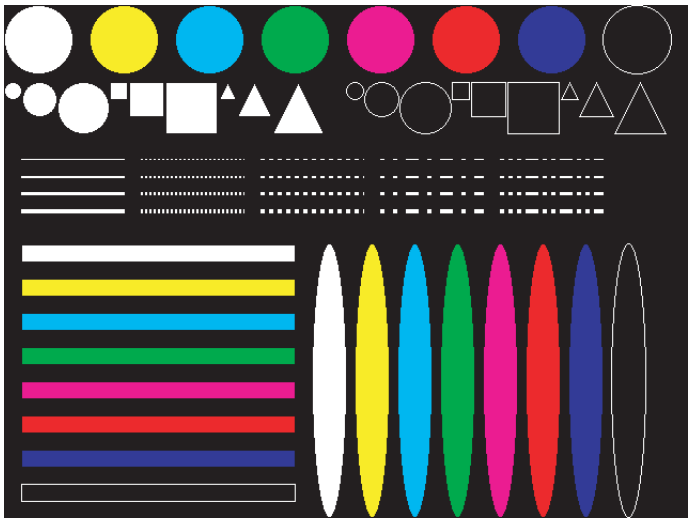
Check missing bit and color visually.



If touch the upper right part of the screen at the final color (white screen), the following 2) Basic figure check screen is displayed.

2 Basic figure check

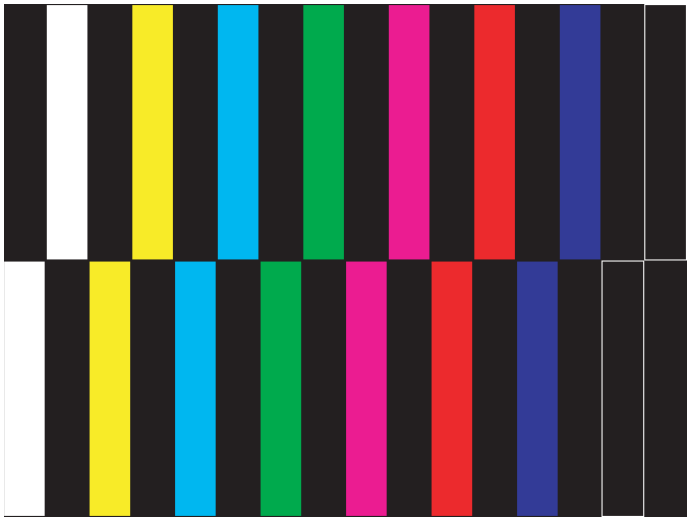
Check whether there is no shape transformation of basic figure or display losses.
The basic figure drawn has 4 types: 1. Filled circle, 2. Line, 3. Rectangle, 4. Ellipse.



To (a) Pattern 1of (3) Move check among screens

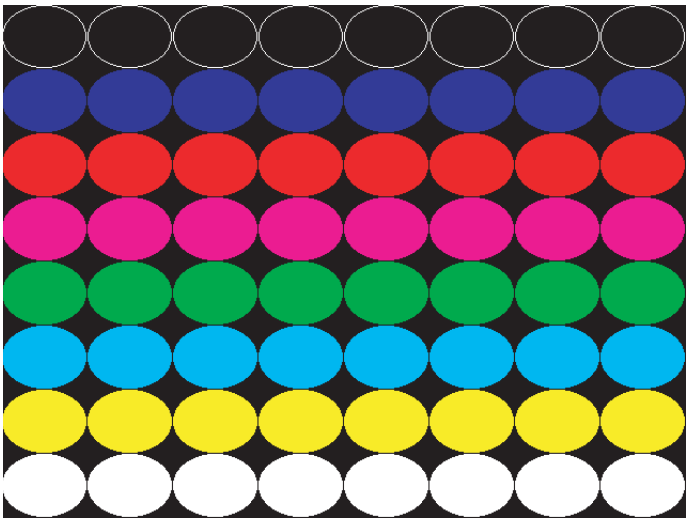
3 Move check among screens

(a) Pattern 1: Shape transformation, color check
The drawn figures are displayed in order and at regular intervals.
If the shape and color are displayed visually in order, it is normal.



Pattern 1

(b) Pattern 2: Shape transformation, color check
The drawn figures are displayed in order and at regular intervals.
If the shape and color are displayed visually in order, it is normal.

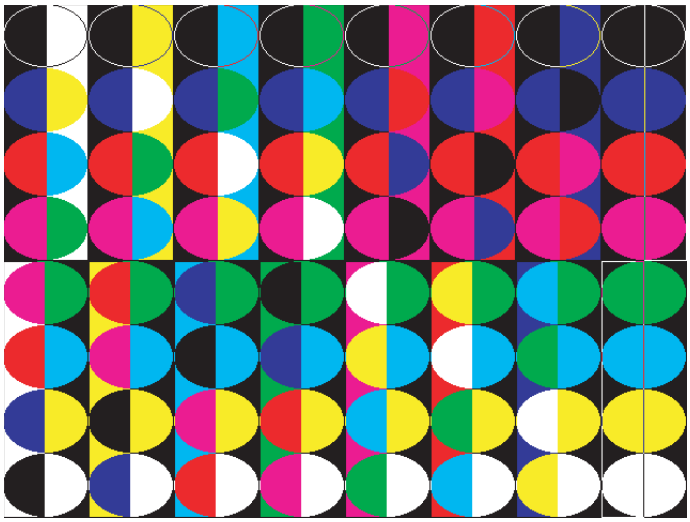


Pattern 2

(c) Pattern 3: Shape transformation, color check

The overlaped shapes of pattern 1 and pattern 2 are displayed.

If the shape and color are displayed visually in order, it is normal.

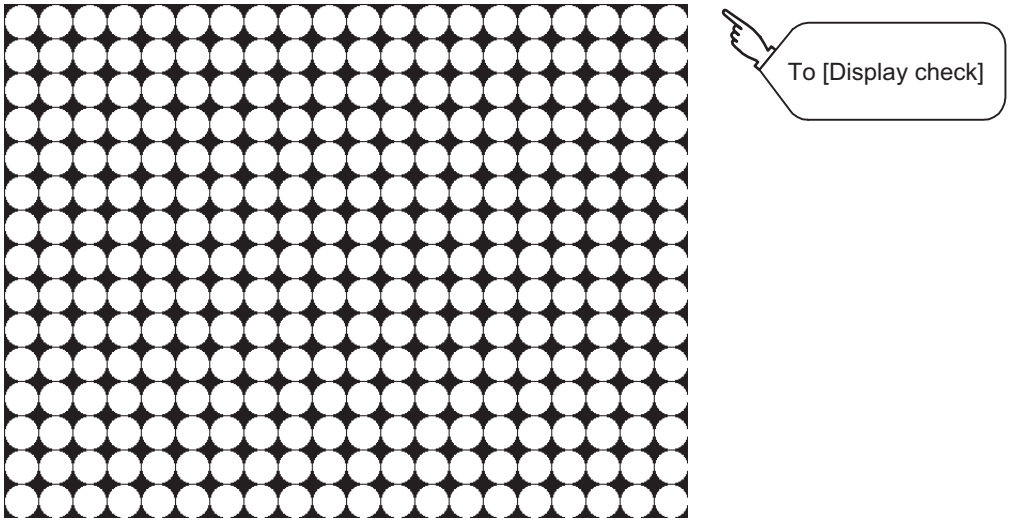


(d) Pattern 4: Shape Check

The drawn figures are displayed in order and at regular intervals.

If the shape and color are displayed visually in order, it is normal.

If touch the upper right part of the screen, returns to [Display check] screen.



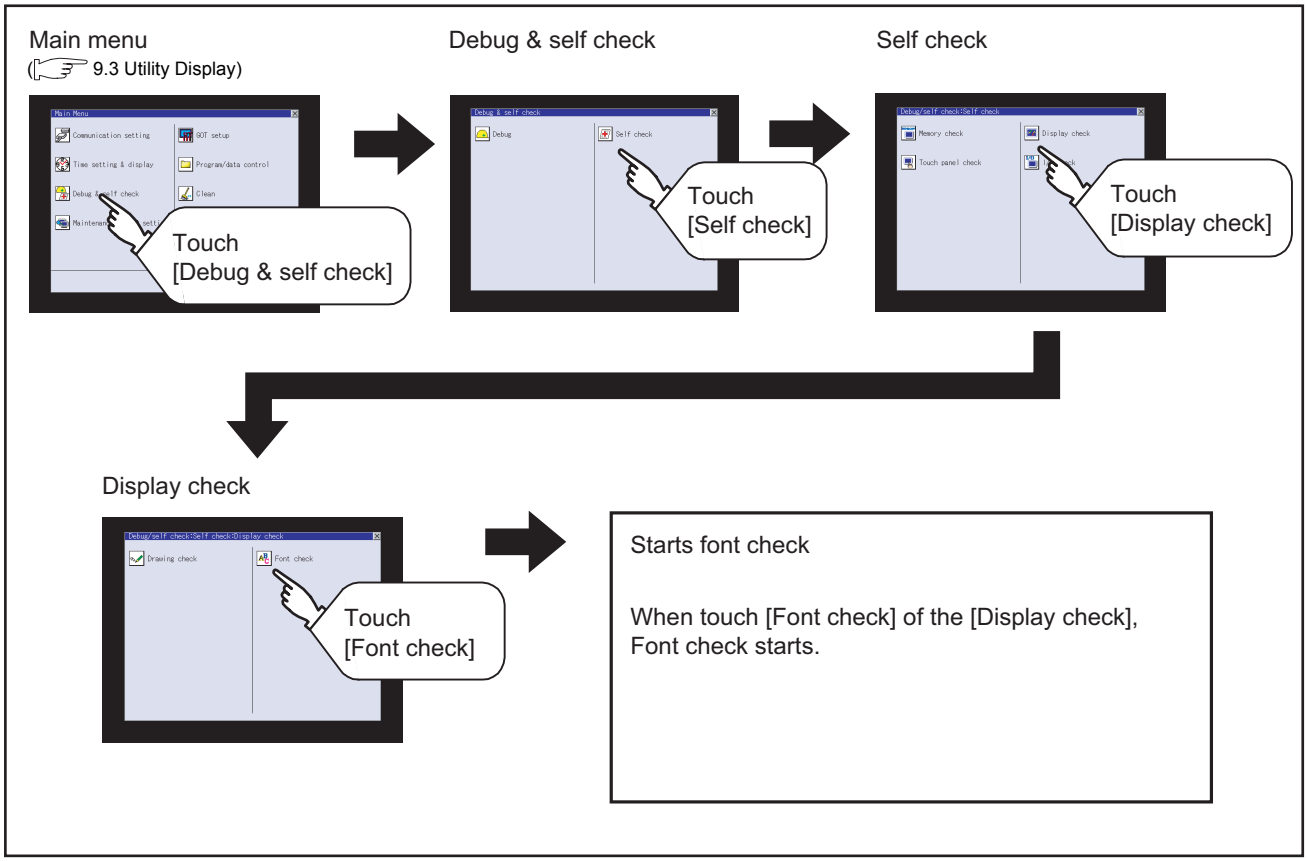
The main screen image after the screen information read and write is executed

14.5 Font Check

14.5.1 Font check function

The font check is a function which confirms fonts installed in GOT. The character data of the font is displayed on the upper left part of the screen one by one.

14.5.2 Display operation of Font check



Point

Notes on Font Check

Judged as normal if the following characters are correctly displayed. (UNICODE)

Alphabetic characters etc.	: 0 x 0000 to 0 x 04F9 (From basic Latin to Kirill)
Hangul characters	: 0 x AC00 to 0 x D7A3 (Hangul / Hangul auxiliary)
Kanji	: 0 x 4E00 to 0 x 9FA5 (CJK integrated Kanjis)

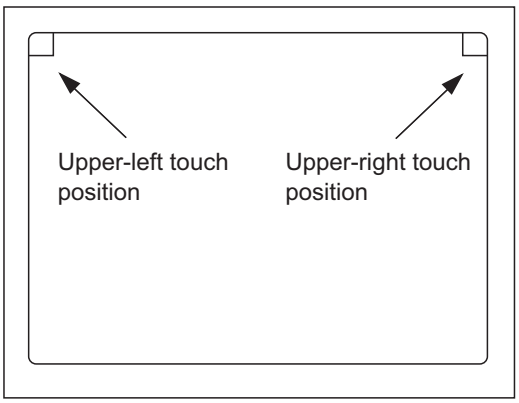
If the characters above are not displayed correctly, the fonts may not be installed. Install the standard monitor OS again.

14.5.3 Font check operation

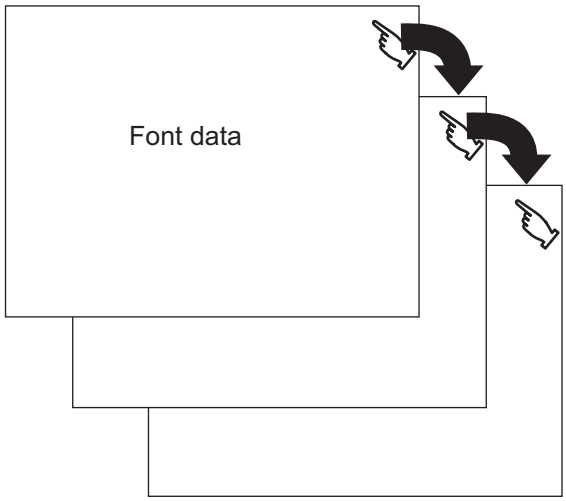
Font check starts by touching [Font Check] in the [Display check] screen.
The character data of the built-in font (in the built-in flash memory) can be checked visually to confirm the font drawings by displaying the character data serially on the screen.

1 Before execute font check

Touching the upper right part of the screen proceeds to the next check in each step during Font check.
Touching the upper left part of the screen returns to the [Display check] screen.



The installed font data is displayed by touching the upper right part of the screen.



Point

Option fonts

To display optional fonts, the followings are required.

- The option font installation
- Option function board installation

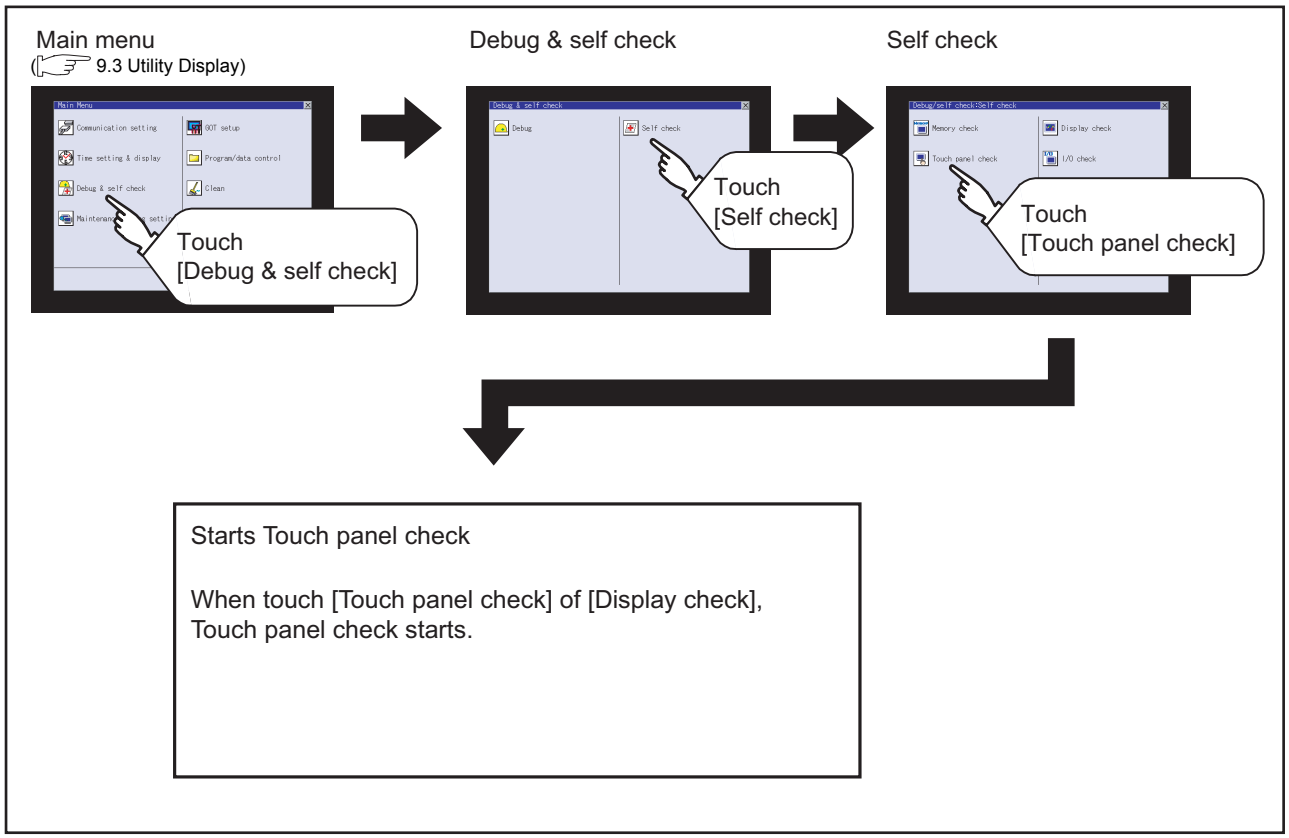
The option fonts are displayed at the end.

14.6 Touch Panel Check

14.6.1 Touch panel check function

Touch panel check is a function which checks whether there is no dead zone area in touch key minimum unit (16 dots x 16 dots).

14.6.2 Display operation of Touch panel check



Point

Notes on Touch panel check

If the touched part is not filled with yellow color, there are the following two possible causes.

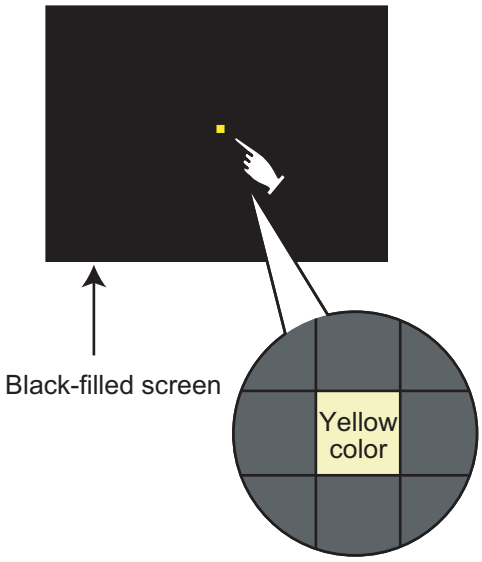
1. Display part failure
2. Touch panel failure

In that case, contact your local Mitsubishi (Electric System) Service.

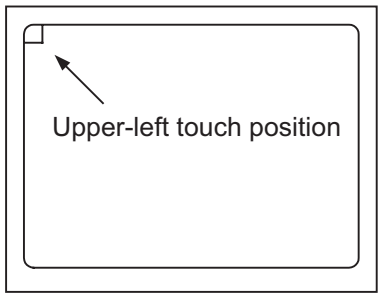
14.6.3 Touch panel check operations

If touch [Touch panel check] of self-check, a black-filled screen is displayed over the entire screen area.

1 Touch a part of the screen.
The touched part becomes a yellow-filled display.



2 If touch the upper left part, returns to the self-check.



Remark

Checking the upper left part of the screen

Only the upper left part of the screen cannot be filled with yellow.
If returnes to the self-check by touching the upper left part, judge that the upper left area operates normally.

14.7 I/O Check

14.7.1 I/O check function

The I/O check is a function which checks whether GOT and PLC can communicate with each other.
If I/O check ends normally, the communication interface and the connection cable hardwares are normal.
To execute I/O check, the communication driver has to be installed in GOT in advance from GT Designer2.
Refer to the following for the details related to the installation of the communication driver.

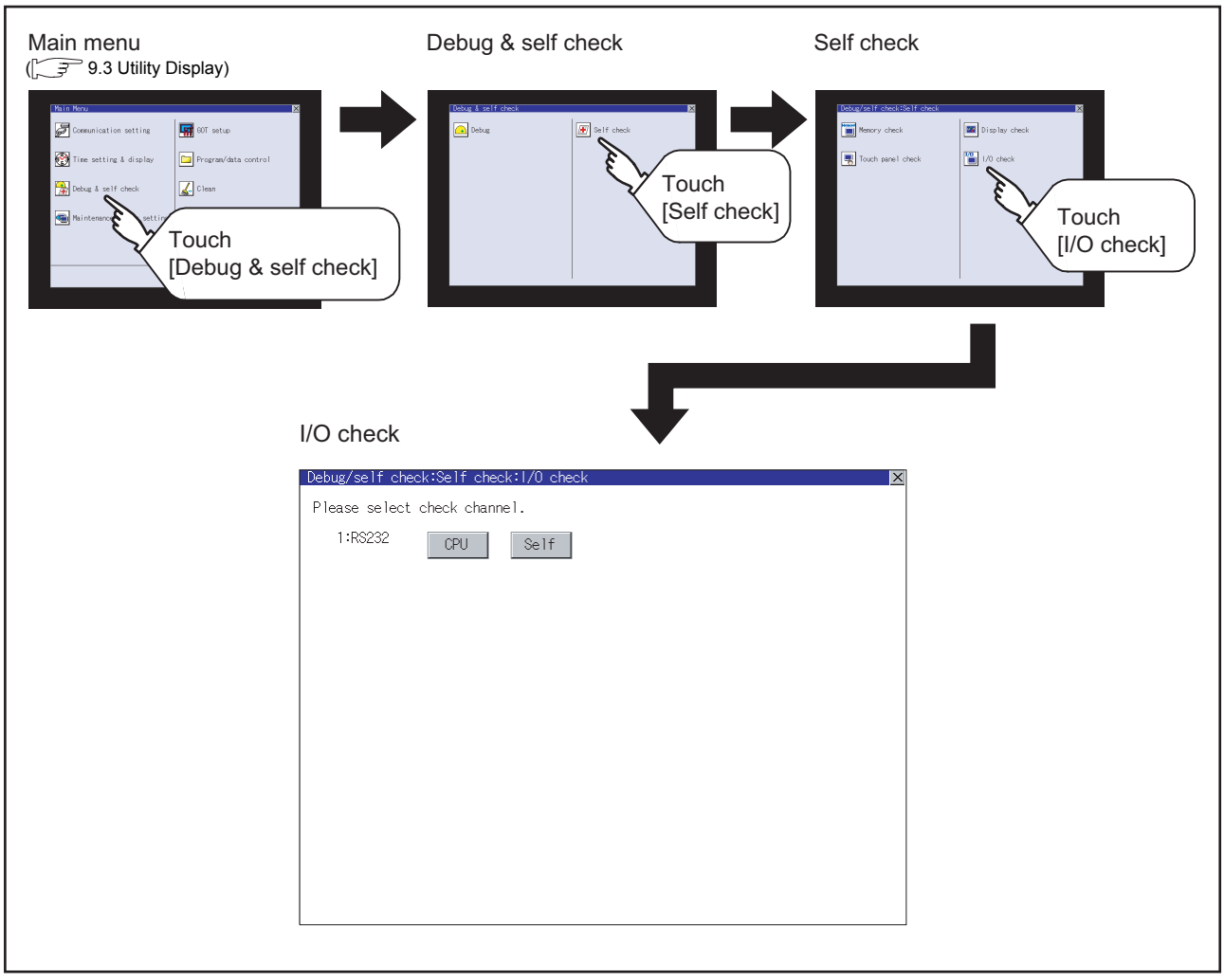
☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(8. TRANSFERRING DATA)

Point

Precautions for executing I/O check function

Only the [RS-232 Interface] communication interface can carry out the I/O check function.
(The connection with RS-422 is possible by installing the RS-422 conversion unit to the RS-232 interface.)

14.7.2 Display operation of I/O Check

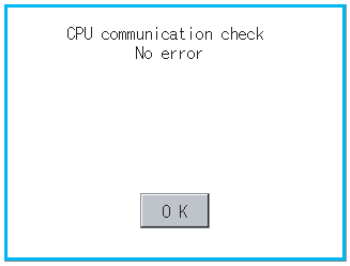


1 Connecting target confirmation

If touch [CPU] button, the connecting target confirmation communication check is carried out.

1 After the CPU communication starts normally, the dialog mentioned right notifying that it is on checking, untill the connecting target confirmation communication ends normally.

2 When the connecting target confirmation communication ends, its result is notified by dialog.
If the connecting target confirmation communication ends normally, the dialog notifying of the normal termination mentioned right is displayed. If touch [OK] button after confirming the result, returns to [I/O check].



If the dialog mentioned right is displayed after selecting connecting target confirmation or during CPU communication check, confirm the following.

- No misconnection with CPU

(☞ GOT1000 Series Connection Manual)

- No hardware error

(☞ GOT1000 Series Connection Manual)

- No missettings of parameter

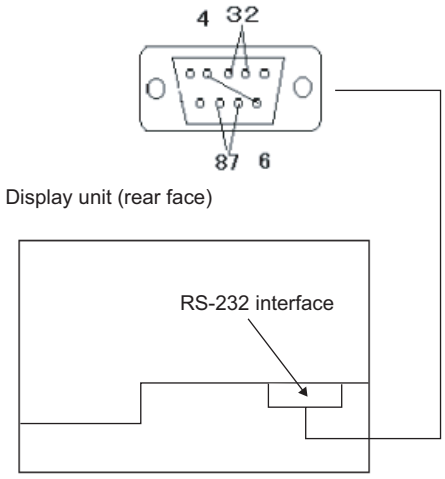
(☞ 10.2 Communication Detail Settings)

If touch [OK] button in the dialog After confirming the result, returns to [I/O check].

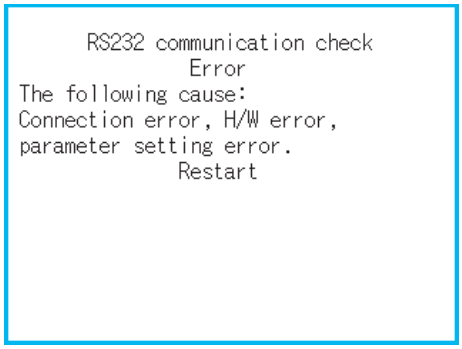
2 Self-loopback

If touch [Self], the hardware check of RS-232 interface is carried out.

1 For preparation for the self-loopback communication check, insert the connector for self-loopback check (Customer purchased) shown in the diagram right in the RS-232 interface.
For this connector, short 2 and 3 pins, 7 and 8 pins and 4 and 6 pins, respectively.

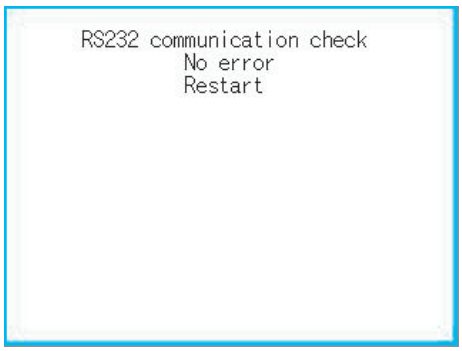


2 After selecting [Self], the transferred data and received data are verified through the self-loopback connector. If data can not be received during data transmission, the dialog shown right is displayed, which notifies the self-loopback connector failure, self-loopback connector communication error or RS-232 interface hardware failure.



3 During check, the dialog shown right is displayed.

4 When the all checks ended normally, the dialog shown right is displayed. If touch [OK] button after confirming the contents, the GOT restarts.



5 If an error occurs, the dialog is displayed, which notifies the GOT terminates abnormally at that point and at which byte the error occurred. If a verification error occurs, the RS-232 interface hardware may be faulty.
If touch [OK] button in the dialog, the GOT restarts.

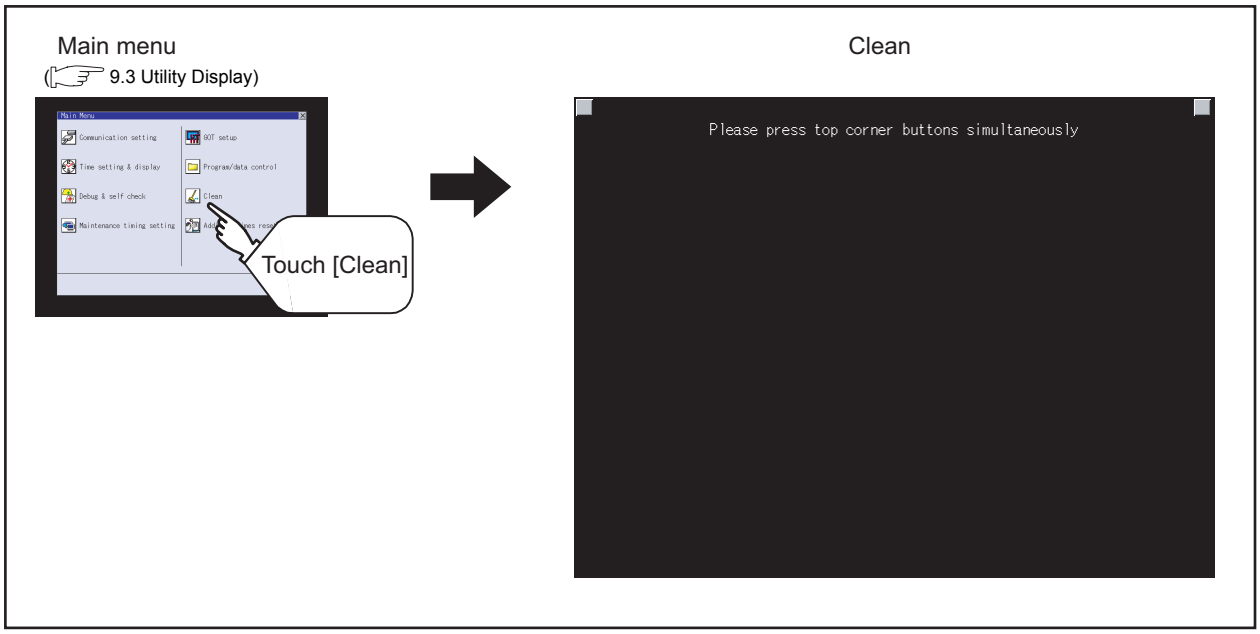
15. CLEANING OF DISPLAY SECTION (CLEAN)

In utility, the screen can be set as not to be effected by touching the screen when clean with clothes.
Refer to the below for the cleaning procedure.

19.3 Cleaning Method

15.1 Clean

15.1.1 Display operation of Clean



Even if touch points other than the upper left corner and upper right corner of the screen, the GOT does not operates.

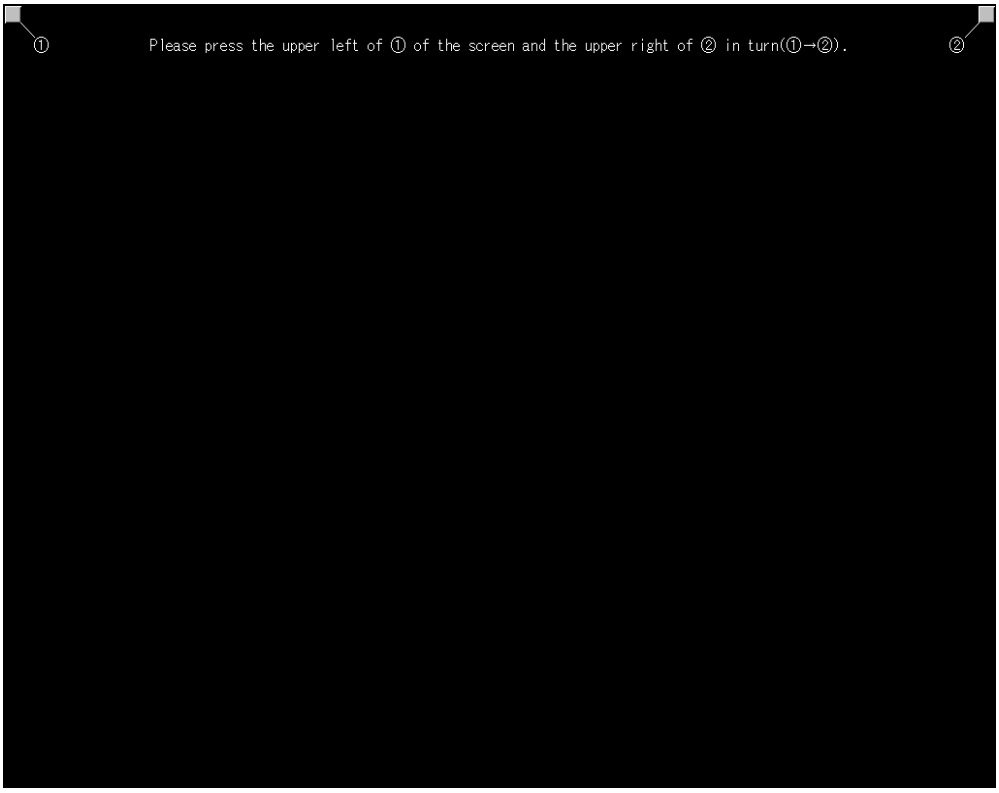
15.1.2 Operation of Clean

After cleaning the screen, touch the screen following the instruction displayed.
After touching the screen, the screen returns to the Main Menu.

Depending on the GOT to use, either of the following screens is displayed.

- Display pattern 1

- Display pattern 2



16. MAINTENANCE TIME NOTIFICATION SETTING (MAINTENANCE TIMING SETTING)

Energization time, touch count and writing times used as standard for the maintenance time are set.
When use the maintenance timing function, battery and option function board are required.
Refer to the following below for details of battery and option function board.

☞ 8. OPTION

16.1 Maintenance Timing Setting

16.1.1 Maintenance time notification function

When use maintenance time notification function, battery and option function button are required.
When setting the maintenance notifying time, refer to the life descrived in Section 3.2 Performance Specifications as a guide to set time or count.
The maintenance time notification is output by the following two methods.

- Outputs to GOT special register (GS680).
- Outputs as system alarm

For details of the GOT special register and system alarm, refer to the following.

☞ GT Designer2 Version ☐ Screen Design Manual

Point

Switching OFF the maintenance time notification output

The maintenance time notification setting which has been set once is not switched OFF even if changing its setting.
Switch OFF the maintenance time notification by the following methods.

- Execute addition time reset.
- Switch OFF each bit of "maintenance time notification cancel information (GS638)".

Item	Description	Setting range	Unit	Maintenance points Reference page
Backlight maintenance time notification period. (0 to 100000 hour)	Sets energization time for the maintenance notification output. When 0, no message notification. The time is counted only when backlight is lit, in every ten minutes.	0 to 100 <At factory shipment: 0>	1000 hours	18-5
Display section maintenance time notification period (0 to 100000 hour)	Sets energization time for the maintenance notification output. When 0, no message notification. The time is counted only when energized, in every ten minutes.	0 to 100 <At factory shipment: 0>	1000 hours	—
Touch key maintenance time notification count (0 to 2000000times)	Sets touch key touching count for the maintenance notification output. When 0, no message notification. Counts by every screen touch.	0 to 200 <At factory shipment: 0>	10000 times	—
Built-in flash memory maintenance time notification count (0 to 1000000times)	Sets built-in flash memory writing count for the maintenance notification output. When 0, no message notification. Counts by every writing in built-in flash memory.	0 to 200 <At factory shipment: 0>	1000 times	—

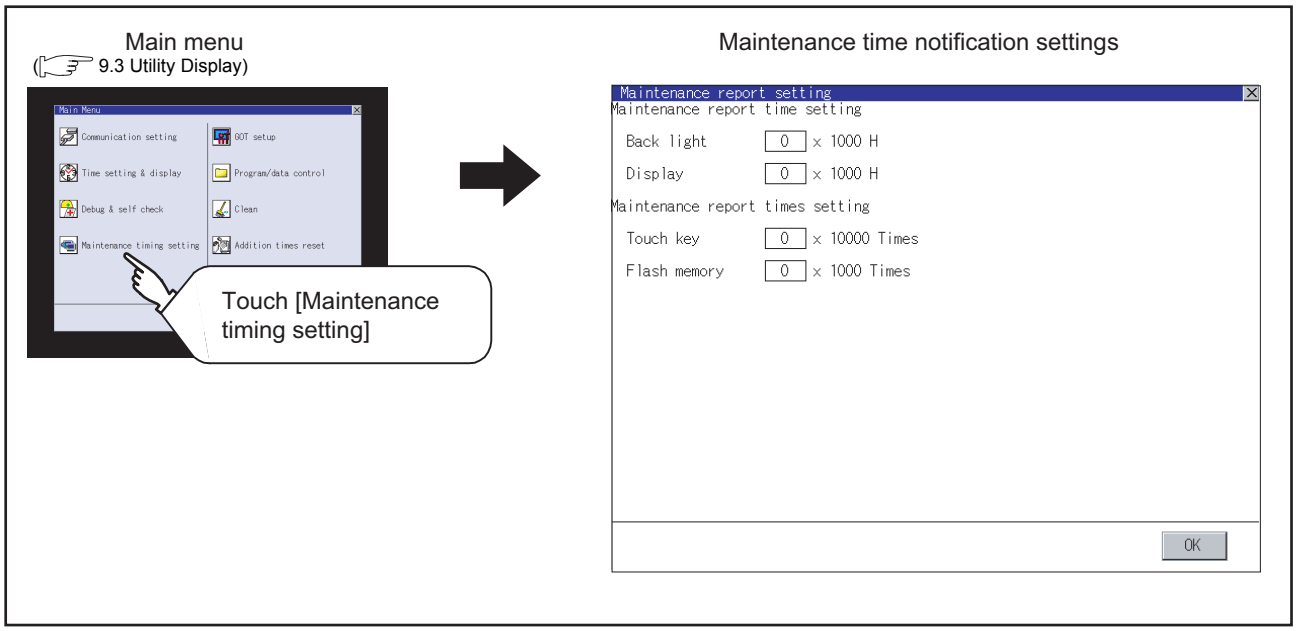
By using system alarm, the message that notifies that the maintenance time is near or it is already maintenance time is displayed.
For the display of the system alarm, refer to the following.

☞20. ERROR MESSAGE AND SYSTEM ALARM

For the display of the system alarm, refer to the following.

☞ GT Designer2 Version ☐ Screen Design Manual

16.1.2 Display operation of maintenance timimg setting



For the addition times as power on addition time, refer to the following.

☞ 17.1 Addition times reset

16.1.3 Operation of maintenance time notification

1 Touch a select button (item to be set) on the screen.

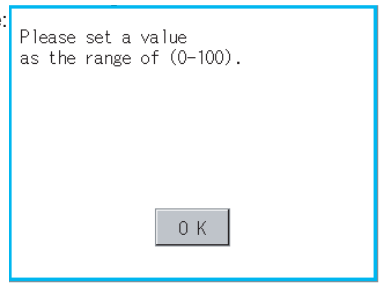
• [Numerical] Key: If touched, displays the keyboard in the bottom part of the screen.
(For keyboard operation, refer Section 9.3.3 Basic operation of settings change page.)

Define the numerical input by [Enter].

Remark

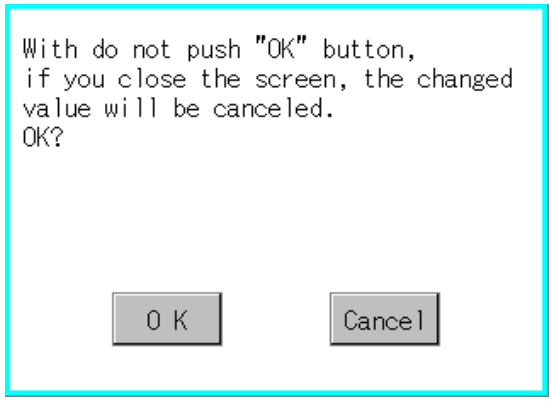
If touch [Enter] after inputting the value out of the setting range, the alarm message is displayed.

Example:



2 If touch [OK] button, the settings are reflected.

3 If touch ☒ button instead of touching [OK] button, the settings are canceled after the dialog below is displayed, and the screen closes.



4 If touch ☒ button, GOT restarts.
After restart, GOT operates with the changed settings.

17. ADDITION TIMES RESET FOR MAINTENANCE TIME NOTIFICATION (ADDITION TIMES RESET)

Displays the present value of Backlight maintenance time notification period, Display section maintenance time notification period, Touch key maintenance time notification count and Built-in flash memory maintenance time notification count which are additioned for the maintenance time notification, respectively and resets these values.

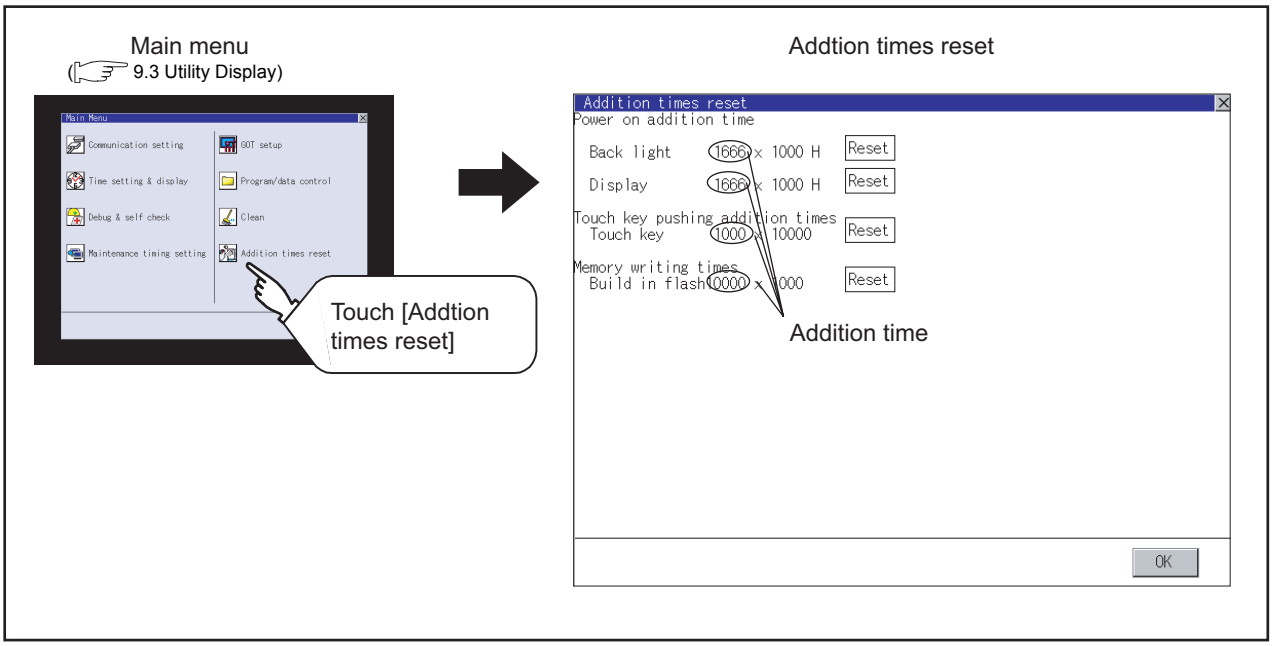
17.1 Addition times reset

17.1.1 Addition times reset function

Resets the value which is additioned by the "16.1.1 Maintenance time notification function" to "0".

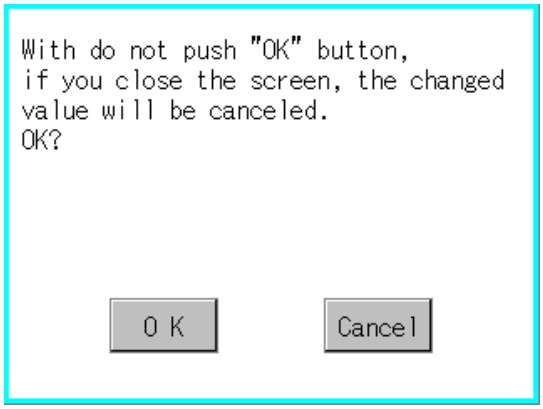
Item	Description
Backlight power on addition time reset	Function to reset the power on addition times to "0".
Display power on addition time reset	Function to reset the power on addition times to "0".
Touch key pushing addition times reset	Function to reset the pushing addition times to "0".
Build in flash memory writing addition times reset	Function to reset the writing addition times to "0".

17.1.2 Display operation of Addition times reset



17.1.3 Operation of Addition times reset

1. If touch [Reset] button of each item, the addition time or the addition count becomes "0".
2. If touch [OK] button, the reset value is reflected.
3. If touch ☒ button instead of touching [OK] button, the changed contents are canceled after the dialog below is displayed, and the screen closes.



4. If touch ☒ button, GOT restarts.
   After restart, GOT operates with the changed settings.

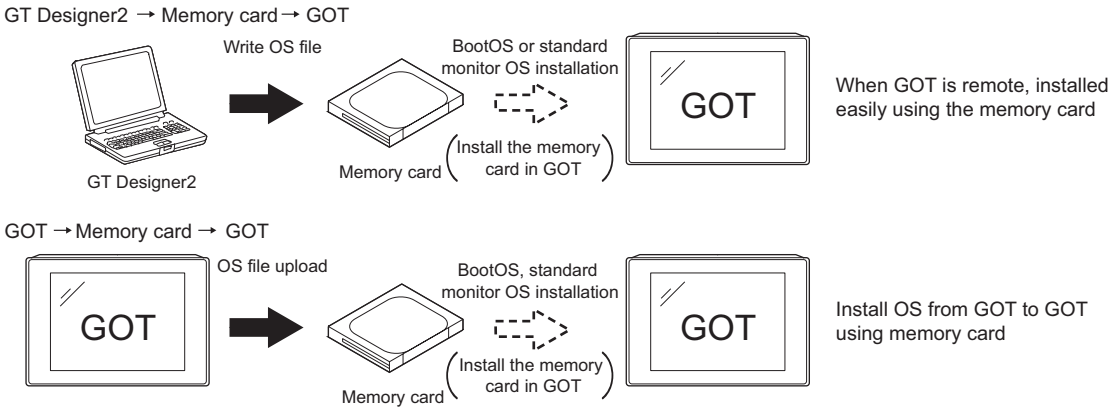
Point

Addition times resetting timing

It is convenient to reset addition times when replace backlight, display section, touch panel or built-in flash memory.

18. INSTALLATION OF COREOS, BOOTOS AND STANDARD MONITOR OS

To execute the GOT utility, BootOS or standard monitor OS has to be installed in the C drive (built-in flash memory).
This chapter explains the installation using GOT.


GT Designer2 → Memory card → GOT
Write OS file
BootOS or standard monitor OS installation
GOT
When GOT is remote, installed easily using the memory card
GT Designer2
Memory card
Install the memory card in GOT
GOT → Memory card → GOT
OS file upload
BootOS, standard monitor OS installation
GOT
Install OS from GOT to GOT using memory card
Memory card
Install the memory card in GOT

For details of the installation using GT Designer2, refer to the following.

☞ GT Designer2 Version ☐ Basic Operation/Data Transmission Manual

Point CoreOS

In 18.1 to 18.4 of this chapter, only BootOS and standard monitor OS are described.
For CoreOS, refer to the following.

☞ Section 18.5 CoreOS

18.1 BootOS and Standard Monitor OS Required for installation

Under-mentioned BootOS and Standard monitor OS are necessary to execute utility.

OS name	Function overview		Storage location
BootOS	Requied for the control of GOT and the communication between PC and GOT. Installed at factory shipment. (BootOS can be installed from GT Designer2 or the CF card. When installed from GT Designer2 or the CF card, GOT is initialized to be the factory shipment status.)		Built-in flash memory C: \G1BOOT\
Standard monitor OS	Required for the GOT operation as the monitoring function of GOT, installation and deletion of the OS file or project data, touch key control or display function of the screen and guidance.	Required for display and operation of the user-created screen and utility screen. Not installed in GOT at factory shipment. Install it from GT Designer2 or the memory card. At installation, select [Mincho] or [Gothic] for the 16-dot standard font.	Built-in flash memory C:\G1SYS\
	System screen data		
	System screen management information file		
	TrueType numerical font		
	12-dot standard font (Gothic)		
	16-dot standard font (Mincho)		
	16-dot standard font (Gothic)		

18.2 Prior Preparations for Installing BootOS and Standard Monitor OS

For the installation using GOT, the memory card storing BootOS or standard monitor OS is required.
For the method of writing BootOS and standard monitor OS in the memory card, the following two methods are available.

(1) [To Memory Card] from GT Designer2

☞ GT Designer2 Version ☐ Basic Operation/Data Transfer Manual

8.8 Transferring Data Using a Memory Card

(2) Uploading from other GOT (BootOS or standard monitor OS has been installed)

☞13. FILE DISPLAY AND COPY (PROGRAM/DATA CONTROL)

Point

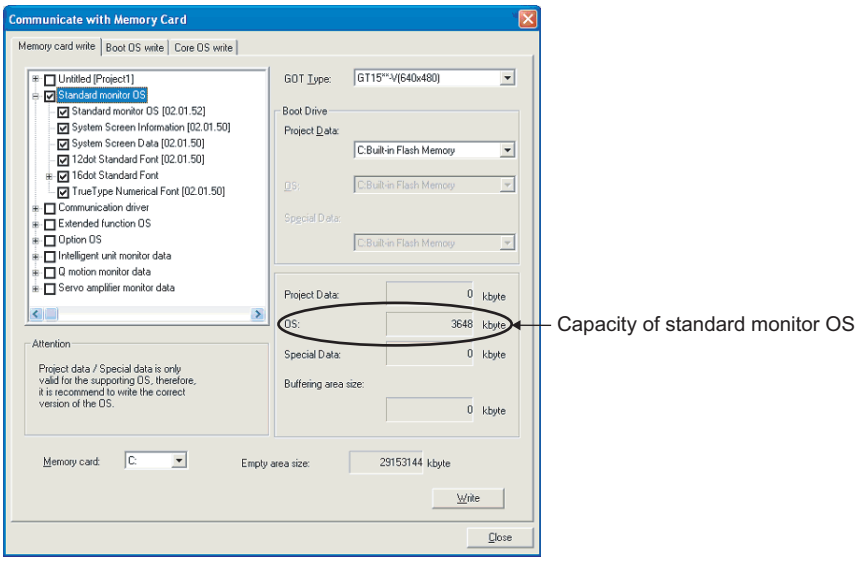
Precautions on writing BootOS, standard monitor OS in memory card

When writing BootOS, standard monitor OS, etc. in the memory card, be sure to execute by the utility of other GOT or GT Designer2.

The installation is not executed properly with the memory card to which uploaded from the utility of GOT or copied by softwares other than GT Designer2.

Note the available capacity of the memory card.

The available capacity of BootOS and standard monitor OS can be confirmed by [To Memory Card] of GT Designer2.



18.3 BootOS and Standard Monitor OS Installation Using Memory Card

There are the following two types for the BootOS,standard monitor OS installation.

(1) Installing when starting the GOT

(☞ 18.3.1)

All the OS and project data stored in the memory card are transferred to the GOT when powering on the GOT. This installing method is effective in the following cases.

- The GOT utility cannot be displayed.
- The standard monitor OS is not installed.

(2) Installing using the Program/Data control function (Utility)

(☞ 18.3.1)

By operating the utility, select OS or project data stored in the memory card and transfer them to the GOT.

Point

Precautions on installing BootOS, standard monitor OS

(1) When the project data exists in the memory card
After installation completion of BootOS and standard monitor OS, the project data is downloaded. The project data is downloaded in the drive set by [Project data Boot source] of GT Designer2.

(2) When install both BootOS and standard monitor OS
Always install BootOS first.
(If BootOS is installed, the built-in flash memory in GOT is initialized to set in the conditions at factory shipment)
Install standard monitor OS after completing the installation of BootOS.
(At factory shipment, the GOT is installed with BootOS. When the BootOS version up is not carried out, the BootOS installation is not required.)

(3) In case if powering off the GOT during installation
Do not switch OFF the power supply of GOT during installation of BootOS, standard monitor OS. The installation may fail and GOT may not operate.
If installation failure occurred and the GOT doesn't operate, take the following corrective actions.
- BootOS installation failure: Install the CoreOS.
  (☞ 18.5.1Installing the CoreOS)
- Standard monitor OS installation failure: Install the BootOS.
  (☞ 18.3.1Installing when starting the GOT)

18.3.1 Installing when starting the GOT

The displayed message is different depending on the installation condition of standard monitor OS. When the screen requesting operation is displayed, operate the GOT according to the instructions on the screen.

1 Operation procedure

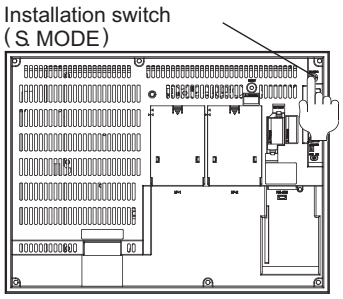
1. Power OFF GOT and CF card access switch. Insert the CF card in which BootOS, standard monitor OS or project data is stored in the CF card interface of GOT.

2. Switch ON the CF card access switch of GOT.

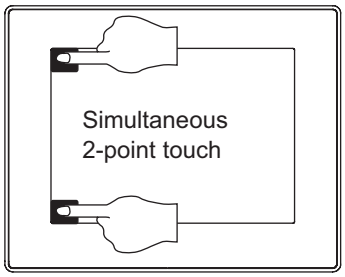
3. Power on the GOT.
   - For GT1595-X

   Power on the GOT while pressing the installation switch (S.MODE switch) on the back of the GOT. (1-point press installation function)
   - For GT1585-S, GT1575-S, GT1575-V, GT1575-VN, GT1572-VN, GT1565-V,GT1562-VN

   Power on the GOT while touching the upper and left of the GOT screen. (2-point presses installation function)

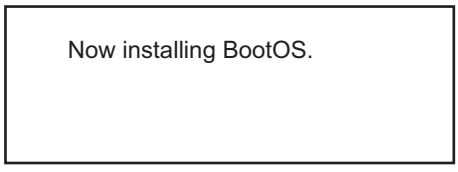


For GT1595-X

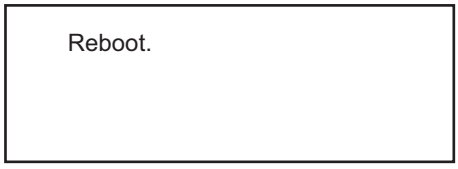


For GT1585-S, GT1575-S/V/VN, GT1572-VN, GT1565-V, GT1562-VN

4. BootOS, standard monitor OS is installed in the built-in flash memory.
   The CF card access LED is lit during install execution.
   Do not pull out the CF card or power OFF the GOT while the CF card access LED is lit.



5. GOT restarts automatically after installation is completed.
   (When standard monitor OS is already installed, GOT restarts by touching OK button.)



6. After confirming normal restart, switch OFF the CF card access switch of GOT. When it is confirmed that CF card access LED is not lit, remove the CF card from the CF card interface of GOT.

18.3.2 Installation method using the program/data control function (Utility)

For details of program/data control function, refer to the following.

☞13. FILE DISPLAY AND COPY (PROGRAM/DATA CONTROL)

Point

Precautions on executing program/data control function

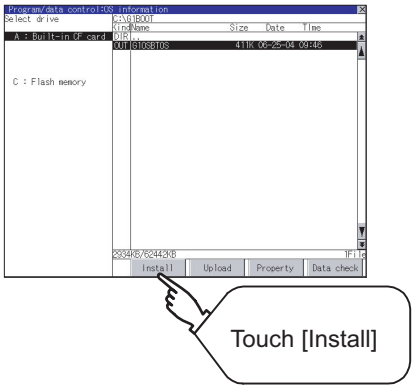
When execute program/data control function, standard monitor OS has to be installed in GOT in advance. Thus, this function cannot be used for the initial installation of BootOS, standard monitor OS after purchasing GOT.
Install standard monitor OS by the following two methods.

(1) GT Designer2

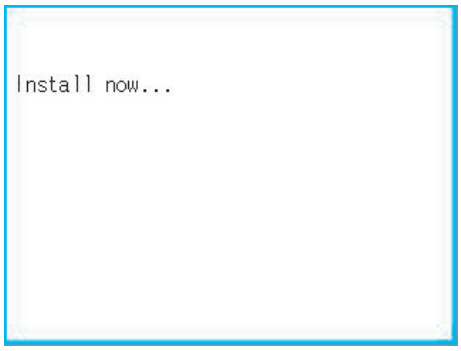
(2) Installing when starting the GOT

1 Operation procedure

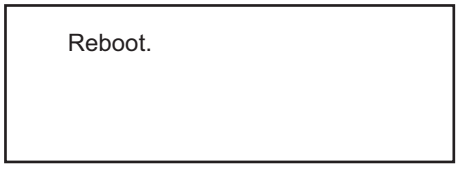
1. Power OFF the GOT. After CF card access LED is off, install the CF card in which BootOS, standard monitor OS or project data is stored in the CF card interface of GOT.
2. Switch ON the CF card access switch of GOT.
3. Display the program/data control function screen (Utility) on the GOT, and install BootOS, standard monitor OS from the CF card to GOT.



4 CF card access LED is lit during install execution.
Do not pull out the CF card or power OFF the GOT while the CF card access card is lit.



5 GOT restarts automatically after the installation is completed.



6 After confirming that GOT restarted normaly, switch OFF the CF card access switch of GOT. Confirm the CF card access LED is not lit, remove the CF card from the CF card interface of GOT.

18.4 When installing the different version of BootOS, standard monitor OS

(1) BootOS installation

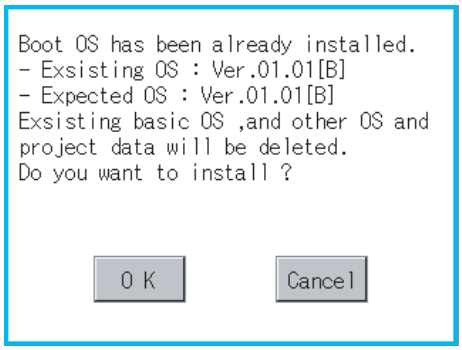
When installing BootOS, GOT compares the version of the BootOS to be installed with the version of BootOS which is already installed.

When the BootOS to be installed has the older major version, GOT displays the installation disapproving message to cancel the installtion so that the older version may not be written.

Boot OS has been already installed.
- Existing OS : Ver.01.01[B]
- Expected OS : Ver.01.00[A]
Because of version down, GOT aborts installing.
OK

<GOT screen when BootOS is installed from memory card.>

Even when the version of the BootOS to be installed has the same or later version, the version information and the dialog for selecting continue/not continue will be displayed.


Boot OS has been already installed.
- Exsisting OS : Ver.01.01[B]
- Expected OS : Ver.01.01[B]
Exsisting basic OS ,and other OS and project data will be deleted.
Do you want to install ?
OK
Cancel

<GOT screen when BootOS is installed from memory card.>

If touch [OK] button, installation is executed.

If touch [Cancel] button, installation is canceled.

(2) Standard monitor OS installation

Match the version of each OS file when installing standard monitor OS.

Standard monitor OS cannot be installed if the version of each OS file does not match.

When the installation process is discontinued.

Standard monitor OS :	1.	O.	O
Communication driver :	2.	O.	O
Optional function OS :	2.	O.	O

Please match the number.

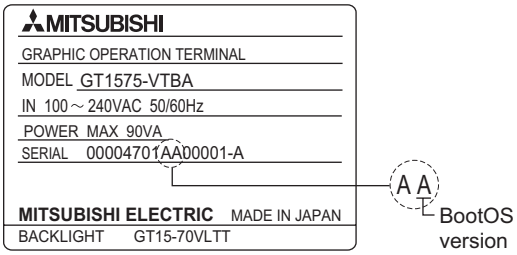
When the installation process is normally executed.

Standard monitor OS :	2.	O.	O
Communication driver :	2.	O.	O
Optional function OS :	2.	O.	O

Point

Checking method of BootOS, standard monitor OS version

1. Check the version of BootOS or standard monitor OS installed in GOT at [OS information] of the utility.
   Refer to the following for details.
   ☞ 13.2 OS Information
2. Check the version of BootOS installed in GOT at product shipment on the rating plate on GOT rear face.



18.5 CoreOS

Install CareOS only when the GOT will not be the status of factory shipment even when BootOS is installed.
Normally, the CoreOS has not to be installed.

Point

Precautions for installing CoreOS

When executing the CoreOS installation once, it cannot be canceled on the way.
Do not attempt the followings to cancel the installation on the way.
The GOT may not operate.

- Powering the GOT off.
- Pressing the GOT reset button.
  If the GOT does not operate, please consult your local Mitsubishi (Electric System) Service center or representative.

If the GOT does not recover even when installing the CoreOS, the error may be caused by a hardware failure.
Please consult your local Mitsubishi (Electric System) Service center or representative.

18.5.1 Installing the CoreOS

1 Before installing the CoreOS

(1) Installing procedureThe CoreOS can be installed only when using a memory card.
Installation via USB/RS-232/Ethernet is not available.

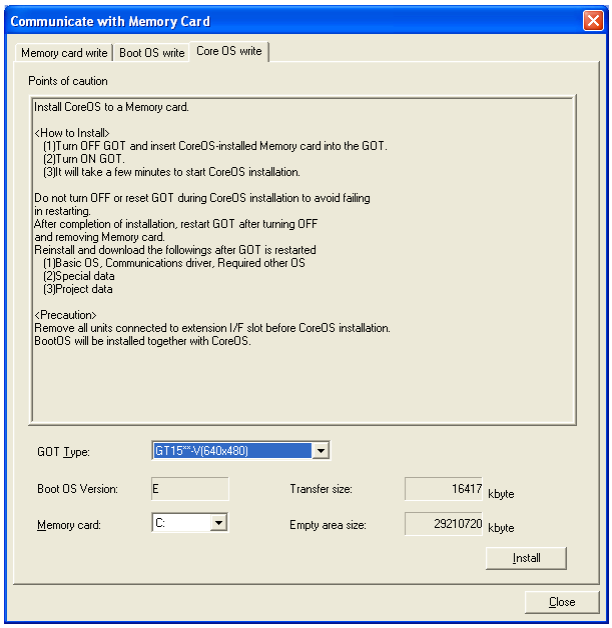
(2) Memory card to be used
Memory card of 32MB or more is required.

(3) Boot OS
When installing the CoreOS, the latest BootOS is also installed automatically.
(Operation by the user is not required.)

2 Installing the CoreOS

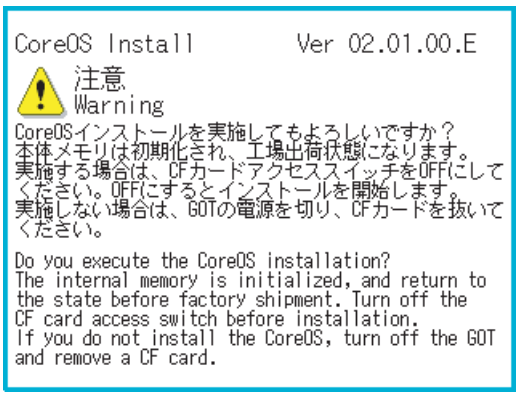
1 Write the CoreOS from GT Designer2 to the CF card.
For details of GT Designer2 operation, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(8. TRANSFERRING DATA)

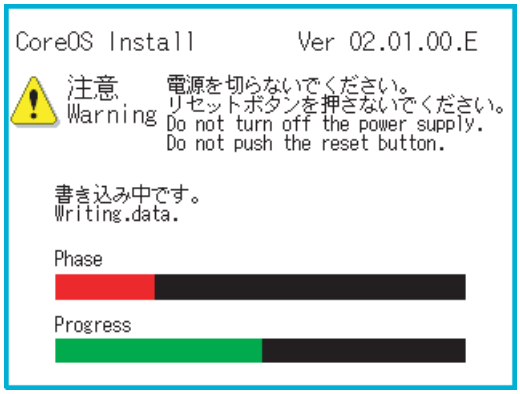

Communicate with Memory Card
Memory card write
Boot OS write
Core OS write
Points of caution
Install CoreOS to a Memory card.
<How to Install>
(1)Turn OFF GOT and insert CoreOS-installed Memory card into the GOT.
(2)Turn ON GOT.
(3)It will take a few minutes to start CoreOS installation.
Do not turn OFF or reset GOT during CoreOS installation to avoid failing in restarting.
After completion of installation, restart GOT after turning OFF and removing Memory card.
Reinstall and download the followings after GOT is restarted
(1)Basic OS, Communications driver, Required other OS
(2)Special data
(3)Project data
<Precaution>
Remove all units connected to extension I/F slot before CoreOS installation.
BootOS will be installed together with CoreOS.
GOT Type:
GT15**-V(640x480)
Boot OS Version:
E
Transfer size:
16417 kbyte
Memory card:
C:
Empty area size:
29210720 kbyte
Install
Close

2 After confirming that the GOT is powered off, install the CF card in the GOT.
After installing, switch the CF card access switch on.

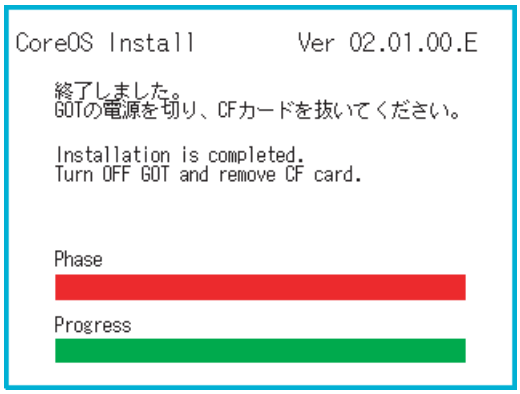
3 Powering the GOT on displays the following screen.
To cancel the installation, power the GOT off and remove the CF card.


CoreOS Install Ver 02.01.00.E
注意
Warning
CoreOSインストールを実施してもよろしいですか？
本体メモリは初期化され、工場出荷状態になります。
実施する場合は、CFカードアクセススイッチをOFFにしてください。OFFにするとインストールを開始します。
実施しない場合は、GOTの電源を切り、CFカードを抜いてください。
Do you execute the CoreOS installation?
The internal memory is initialized, and return to the state before factory shipment. Turn off the CF card access switch before installation.
If you do not install the CoreOS, turn off the GOT and remove a CF card.

4 Turning the CF card access switch off executes Core OS installation.



5 When the installation is completed, the dialog as shown below is displayed.
(The POWER LED of the GOT blinks (green/orange) at the installation completion.)
Confirm that the message is displayed and power the GOT off.



6 Remove the CF card after powering the GOT off.

7 Powering the GOT on again displays the screen as shown below.
(The GOT goes to the status of factory shipment.)
Install OS (Standard monitor OS, communication driver, etc.) or download project data as required.
For how to install each OS or download project data, refer to the following manual.

☞ GT Designer2 Version□ Basic Operation/Data Transfer Manual
(8. TRANSFERRING DATA)

18.5.2 When the CoreOS cannot be installed

When the CoreOS cannot be installed, confirm the following item.
If the CoreOS cannot be installed even after checking the following item, the error may be caused by a hardware failure.
Please consult your local Mitsubishi (Electric System) Service center or representative.

Error		Action
The CoreOS installation is not executed even when installing the CF card in the GOT.		(1) Check whether the CF card access switch of the GOT is on. If the switch is off, switch it on. (2) The writing from the GT Designer2 to the memory card may not have been completed normally. Execute the writing from the GT Designer2 to the memory card again.
The message is displayed on the GOT	GOT error. Contact your local sales office.	The GOT main unit is broken. Please consult your local Mitsubishi (Electric System) Service center or representative.
	CF card error. Installation will be cancelled. Check whether the CF card can be used.	The CF card is defective. (1) Format the CF card and re-execute. (2) Replace the CF card.
	Optional unit has been connected to extension I/F slot. The optional unit should be removed before starting installation. Installation will be canceled.	Remove the communication unit installed on the GOT.
	GOT type and OS version do not match. Installation will be canceled.	The GOT type selected at [Core OS write] of the GT Designer2 is not correct. Confirm the GOT type and perform [Core OS write] again.
	The version of OS is not acceptable to this GOT. Installation will be canceled. Confirm the version of OS.	Install CoreOS from the latest GT Designer2.
	Memory card access switch is off. Turn on the switch and restart the GOT. Installation will be canceled.	The CF card access switch is off. Turn the switch on and restart the GOT.

19. MAINTENANCE AND INSPECTION

DANGER

- Connect the battery correctly.
  Do not discharge, disassemble, heat, short, solder or throw the battery into the fire.
  These may cause the buttery to burst or fire.
- Do not touch the terminals while the power is on.
  Doing so can cause an electric shock.
- Before starting cleaning or retightening the terminal screws, always switch off the external power supplies used in the system in all phases.
  Cleaning or retightening the terminal screws while the power is on may cause an electric shock.
- Before changing the backlight, always switch off the GOT power externally in all phases (when the GOT is connected to the bus, the PLC CPU power must also be switched off externally in all phases) and remove the GOT from the control panel.
  Not switching off the power in all phases may cause an electric shock.
  Not removing the unit from the control panel can cause injury due to a drop.

CAUTION

- Do not disassemble or modify the unit.
  Doing so can cause a failure, malfunction or fire.
- Do not touch the conductive and electronic parts of the GOT directly.
  Doing so can cause a unit malfunction failure.
- The cables connected to the unit must be run in ducts or clamped.
  Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to GOT, do not hold and pull the cable portion.
  Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Before insert/remove the connection cable, power off the GOT.
  Not doing so can cause a failure or malfunction.
- When replacing the backlight, use the gloves.
  Otherwise, it may cause you to be injured.
- Start changing the backlight more than 5 minutes after switching the GOT power off.
  Not doing so can cause a burn due to the heat of the backlight.
- Do not drop or give an impact to the battery mounted on the unit.
  Doing so can cause the battery to be damaged due to the drop or the impact, making the battery liquid to leak in the battery.
  Do not use but dispose the battery that is dropped or given an impact.
- Before touching the unit, be sure to touch grounded metal or similar objects to discharge the static electricity from human body.
  Not doing so can cause a failure or malfunction of the unit.
- When disposing of the product, handle it as industrial waste.

The GOT does not include consumable components that will cause the shorten life.
However, the battery, liquid crystal screen and backlight have each life length.
It is recommended to replace the battery, backlight periodically.
(For the replacement of the liquid crystal screen, please consult Mitsubishi (Electric System) Service.)
Refer to the following section for the lives of the battery, liquid crystal screen and backlight.

☞ 3.2 Performance Specifications

19.1 Daily Inspection

Daily inspection items

No.	Inspection Item		Inspection Method	Criterion	Action
1	GOT mounting status		Check for loose mounting screws.	Securely mounted	Retighten screws within the specified torque range.
2	Connection status	Loose terminal screws	Retighten screws with screwdriver	Not loose	Retighten terminal screws
		Proximate solderless terminals	Visual check	Proper intervals	Correct
		Loose connectors	Visual check	Not loose	Retighten connector fixing screws
3	Usage status	Dirt on protection sheet	Visual check	Not outstanding	Replace with new one
		Foreign material attachment	Visual check	No foreign matter sticking	Remove clean

Refer to the following for the model names of the protection sheet or the replacement procedure.

☞ 8.8 Protective Sheet

19.2 Periodic Inspection

Yearly or half-yearly inspection items
The following inspection should also be performed when equipment has been moved or modified or the wiring changed.

No.	Inspection Item		Inspection Method	Criterion		Action
1	Surrounding environment	Ambient temperature	Make measurement with thermometer or hygrometer Measure corrosive gas	Display section	0 to 40°C	For use in control panel, temperature inside control panel is ambient temperature
				Other portions	0 to 55°C	
		Ambient humidity		10 to 90%RH		
		Atmosphere		No corrosive gas		
2	GOT with 100-240V AC power	Power supply voltage check	100 to 240VAC Measure voltage across terminals.	85 to 242VAC		Change supply power
	GOT with 24VDC power	Input polarity of 24VDC power	24VDC Measure voltage across terminals.	Left : - Right : +		Change wiring
3	Mounting status	Looseness	Move module	Should be mounted firmly		Retighten screws
		Dirt, foreign matter	Visual check	No dirt, foreign matter sticking		Remove, clean
4	Connection status	Loose terminal screws	Retighten screws with screwdriver	Not loose		Retighten terminal screws
		Proximate solderless terminals	Visual check	Proper intervals		Correct
		Loose connectors	Visual check	Not loose		Retighten connector fixing screws

(Continued to next page)

No.	Inspection Item	Inspection Method	Criterion	Action
5	Battery	Check [GOT internal battery voltage status] in [Time setting & display] of the Utility. (Refer to 13.)	No alarm appears	Replace with new battery when the current battery has reached the specified life span, even if battery voltage low is not displayed.

19.3 Cleaning Method

Use GOT always in a clean condition.
To clean the GOT, wipe the dirty part with a soft cloth using neutral detergent or ethanol.

Clean

Point

Precautions for cleaning

Do not use solvents such as acetone, benzene, toluene and alcohol, since they may cause the protective sheet to be deformed or the dissolvable paint on the surface to peel off.

In addition, do not use spray solvents since they may cause the electrical failure of the GOT and peripheral devices.

19.4 Battery Voltage Low Detection and Battery Replacement

The battery is used for backing up the present time or the maintenance time notification data.
It is recommended that you replace battery periodically.
Refer to the following for the replacement procedure.

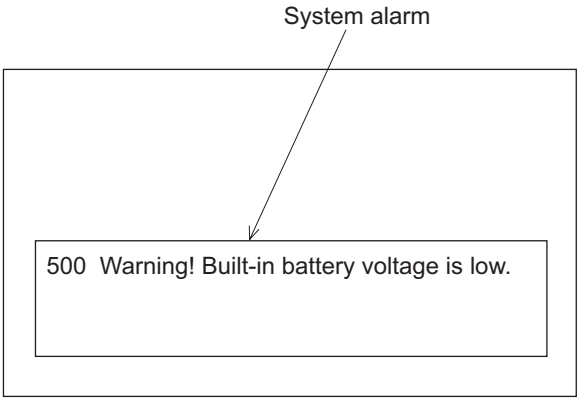
☞ 8.7 Battery

The battery voltage low detection can be confirmed by the utility and system alarm.

Refer to the following for details of the battery status display by the utility.

☞ 12. CLOCK SETTINGS AND BATTERY STATUS DISPLAY (TIME SETTING AND DISPLAY)

By using system alarm, the message that notifies the battery voltage has decreased can be displayed at the battery voltage low on the screen of the GOT.



Refer to the following for details of the system alarm display.

☞ GT Designer2 Version□ Screen Design Manual (8. ALARM)

Point

Battery replacement timing

When detecting voltage low, replace the battery immediately.
Data can be saved for 14 days after the battery voltage low detection and cannot be saved after that.

☞ 8.7.4 Battery life

19.5 Backlight Shutoff Detection and Replacement

The backlight is built into GOT for the liquid crystal display.
When GOT detects backlight shutoff, the POWER LED blinks green/orange alternately.
The brightness of the backlight decreases with the lapse of usage period. When backlight shutoff is detected or the display becomes unclear, replace the backlight.
When replace the backlight, refer to "19.6 Backlight Replacement".

(1) Life of backlight

The usable duration of backlight can be extended by setting to [Screen saving backlight off] in the utility of GOT (GOT set up).
Refer to the following for details.

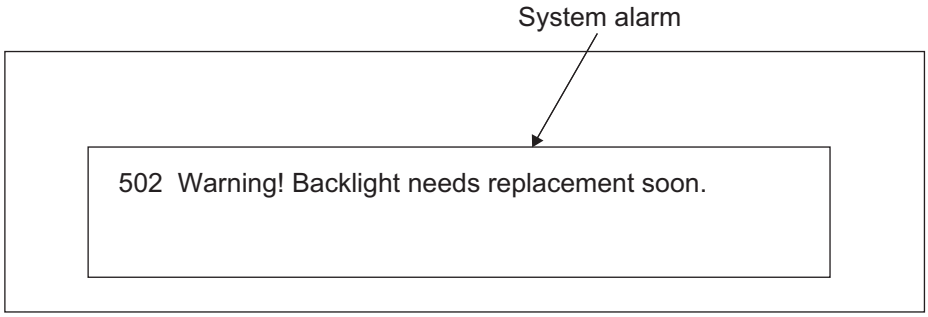
☞ 11. DISPLAY AND OPERATION SETTINGS (GOT SET UP)

(2) Replacement time of backlight

The backlight replacement time can be set by the utility of GOT (Maintenance timing setting) with reference to the life of backlight.
Refer to the following for details.

☞ 16. MAINTENANCE TIME NOTIFICATION SETTING (MAINTENANCE TIMING SETTING)

Moreover, when system alarm is used, the message that notifies of the backlight replacement time can be displayed on the GOT screen.



Refer to the following for the system alarm display.

☞ GT Designer2 Version□ Screen Design Manual (8. ALARM)

Point

Precautions for the backlight shutoff status

In the backlight shutoff status, the touch key operates.
Early replacement of backlight is recommended.

19.6 Backlight Replacement

This section explains the backlight replacing methods.

19.6.1 Applicable backlight

The following backlights are applicable for GT15□□.

Model	Description
GT15-90XLTT	For 15" TFT (XGA) of high intensity and wide angle view
GT15-80SLTT	For 12.1" TFT (SVGA) of high intensity and wide angle view
GT15-70SLTT	For 10.4" TFT (SVGA) of high intensity and wide angle view
GT15-70VLTT	For 10.4" TFT (VGA) of high intensity and wide angle view
GT15-70VLTN	For 10.4" TFT (VGA)
GT15-60VLTT	For 8.4" TFT (VGA) of high intensity and wide angle view
GT15-60VLTN	For 8.4" TFT (VGA)

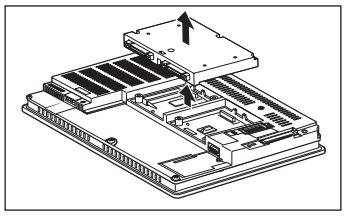
19.6.2 Replacement procedure of backlight

1 For GT15-90XLTT

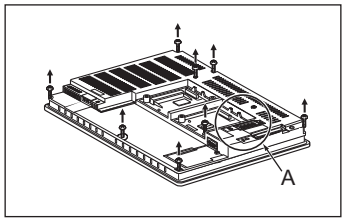
1) Power off the GOT.

2) Disconnect the power supply cable and communication cable.
Remove the GOT from the control panel.

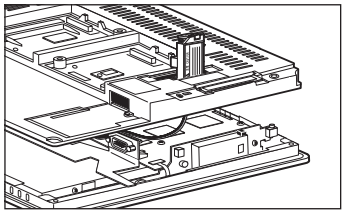
3) Remove the expansion unit cover on the right side of the GOT.
Remove the expansion unit, e.g. bus connection unit, if it is mounted.

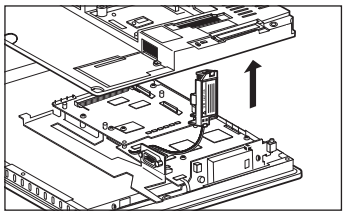


4) Remove the GOT rear fixing screws (8 pcs.) with a screwdriver.

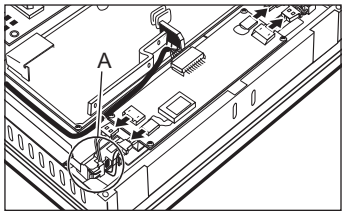


5 Remove the case after passing the battery holder through the mounting hole.
When removing, take care of not cutting the cable of the battery holder.
(Expanded figure of part A in 4)

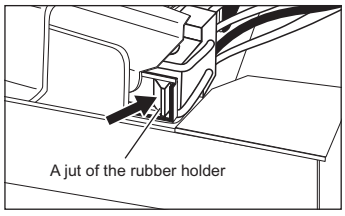


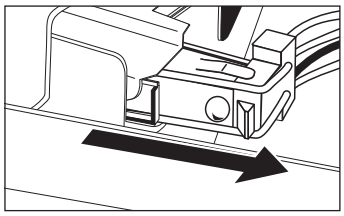


6 Disconnect the cable connector of the upper (H01) backlight and the cable connector of the lower (H02) backlight from the GOT side connectors.

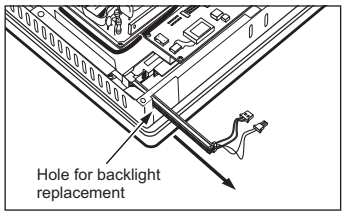


7 Pull the upper backlight by pressing the projecting part of the rubber holder that fixes the backlight with a minus driver to unfasten the backlight.
In the same way, pull the lower backlight by pressing the projection part of the rubber holder that fixes the backlight with a minus driver to unfasten it.
(Expanded figure of part A in 6)





8 Pull the upper backlight out through the hole for backlight replacement on the upper part of the GOT.
In the same way, pull the lower backlight out through the hole for backlight replacement on the lower part of the GOT.



9 Mount a new backlight in the reverse procedure of removal.
When inserting a new backlight through the hole for backlight replacement of the GOT main unit, take care not to damage the sheath of the cable.
And push the backlight in securely until the projection part of the rubber holder is fixed.

Also assemble the case in the reverse procedure of disassembly. (Tighten the GOT rear fixing screws within the torque range of 0.36 to 0.48N·m).
When mounting the case, take care of not biting the cables between the case and the GOT.

2 For GT15-80SLTT, GT15-70SLTT, GT15-70VLTT, GT15-70VLTN

Backlight replacement varies with the hardware version of the applicable GOT.
Before replacement, please confirm the hardware version.

(☞ Appendix 2 Confirming of GOT's Hardware Version)

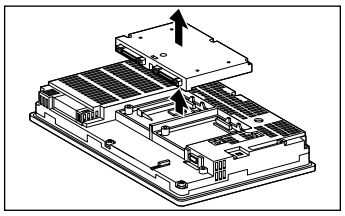
Type	Hardware version	Reference
GT1585-STBA	B (April, 2005) or earlier	(2) Replacement procedure 2
	C (March, 2005) or later	(1) Replacement procedure 1
GT1585-STBD	A (Jul, 2005) or later	(1) Replacement procedure 1
GT1575-STBA	B (April, 2005) or earlier	(2) Replacement procedure 2
	C (March, 2005) or later	(1) Replacement procedure 1
GT1575-STBD	A (Jul, 2005) or later	(1) Replacement procedure 1
GT1575-VTBA	D (April, 2005) or earlier	(2) Replacement procedure 2
	E (March, 2005) or later	(1) Replacement procedure 1
GT1575-VTBD	A (Jul, 2005) or later	(1) Replacement procedure 1
GT1575-VNBA	A (Sep, 2005) or later	(1) Replacement procedure 1
GT1575-VNBD	A (Sep, 2005) or later	(1) Replacement procedure 1
GT1572-VNBA	A (Sep, 2005) or later	(1) Replacement procedure 1
GT1572-VNBD	A (Sep, 2005) or later	(1) Replacement procedure 1

(1) Replacement 1

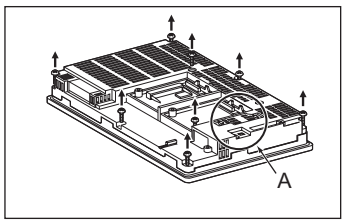
1 Power off the GOT.

2 Disconnect the power supply cable and communication cable.
Remove the GOT from the control panel.

3 Remove the expansion unit cover from the right side of the GOT.
Remove the expansion unit, e.g. bus connection unit, if it is mounted.

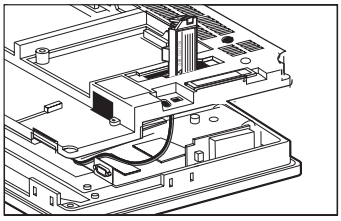


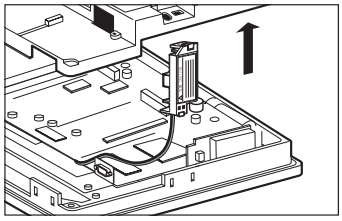
4 Remove the GOT rear fixing screws (8 pcs.) with a screwdriver.



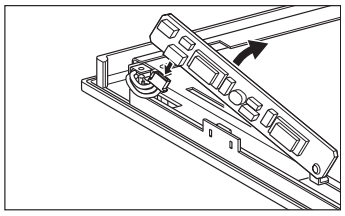
5 Remove the case after passing the battery holder through the mounting hole. When removing, take care of not cutting the cable of the battery holder.

(Expanded figure of part A in 4)



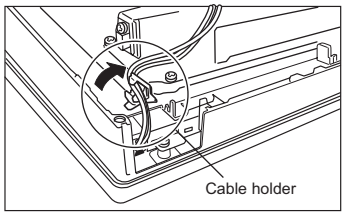


6 Pull up the backlight drive board, and disconnect the cable connector of the backlight from the connector of the backlight drive board.



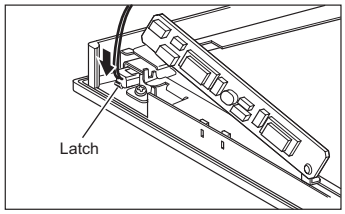
When replacing GT15-80SLTT, remove the cable from the cable holder.

(When replacing GT15-80SLTT)

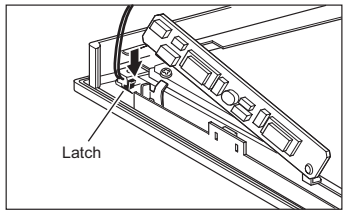


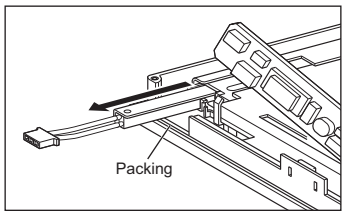
7 Press the backlight fixing latch (black) with your finger, and pull out the backlight to the left.
When pulling the backlight, press the packing with your finger so that the backlight will not be hit with the packing.

(When replacing GT15-80SLTT)



(When replacing GT15-70SLTT, GT15-70VLTT or GT15-70VLTN)





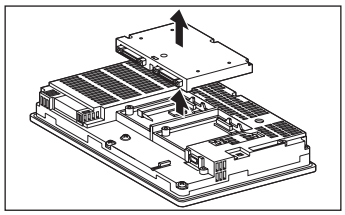
8 Mount a new backlight in the reverse procedure of removal.
Also assemble the case in the reverse procedure of disassembly.
(Tighten the GOT rear fixing screws within the torque range of 0.36 to 0.48 N·m).
When mounting the case, take care of not biting the cables between the case and the GOT.

(2) Replacement 2

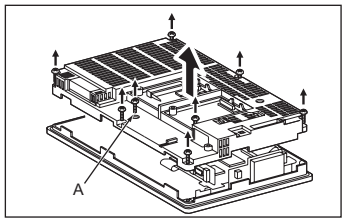
1 Power off the GOT.

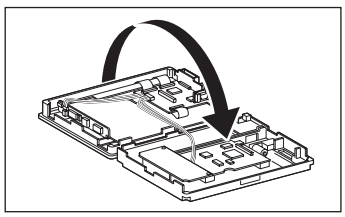
2 Disconnect the power supply cable and communication cable.
Remove the GOT from the control panel.

3 Remove the expansion unit cover from the right side of the GOT.
Remove the expansion unit, e.g. bus connection unit, if it is mounted.

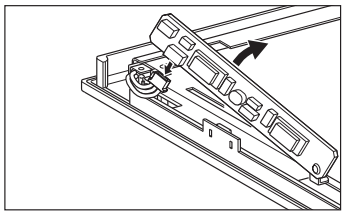


4 Remove the GOT rear fixing screws (8 pcs.) with a screwdriver, and remove the case.
Screw A must be tighten in the torque range of 0.186 to 0.245 N·m, as it is made of plastic.



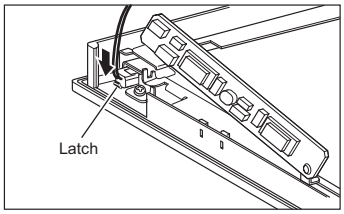


5 Pull up the backlight drive board, and disconnect the cable connector of the backlight from the connector of the backlight drive board.

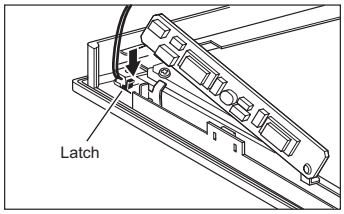


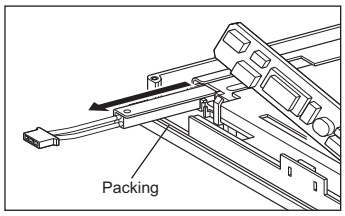
6 Press the backlight fixing latch (black) with your finger, and pull out the backlight to the left.
When pulling the backlight, press the packing with your finger so that the backlight will not be hit with the packing.

(When replacing GT15-80SLTT)



(When replacing GT15-70SLTT, GT15-70VLTT or GT15-70VLTN)





7 Mount a new backlight in the reverse procedure of removal.
Also assemble the case in the reverse procedure of disassembly.
(Tighten the GOT rear fixing screws within the following torque range:
Screw A: 0.186 to 0.245 N·m, Other screws: 0.36 to 0.48 N·m).
When mounting the case, take care of not biting the cables between the case and the GOT.

3 For GT15-60VLTT or GT15-60VLTN

Backlight replacement varies with the hardware version of the applicable GOT.
Before replacement, please confirm the hardware version.
(☞ Appendix 2 Confirming of GOT's Hardware Version)

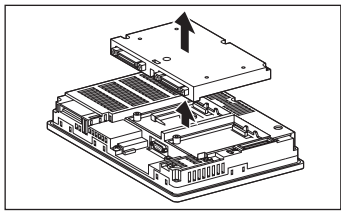
Type	Hardware version	Reference
GT1565-VTBA	D (April, 2005) or earlier	(2) Replacement procedure 2
	E (March, 2005) or later	(1) Replacement procedure 1
GT1565-VTBD	A (Jul, 2005) or later	(1) Replacement procedure 1
GT1562-VNBA	A (Sep, 2005) or later	(3) Replacement procedure 3
GT1562-VNBD	A (Sep, 2005) or later	(3) Replacement procedure 3

(1) Replacement 1

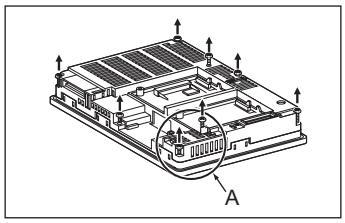
1 Power off the GOT.

2 Disconnect the power supply cable and communication cable.
Remove the GOT from the control panel.

3 Remove the expansion unit cover on the right side of the GOT.
Remove the expansion unit, e.g. bus connection unit, if it is mounted.

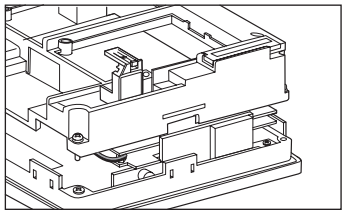


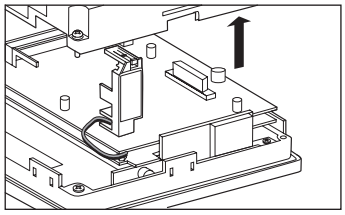
4 Remove the GOT rear fixing screws (8 pcs.) with a screwdriver.



5 Remove the case after passing the battery holder through the mounting hole.When removing, take care of not cutting the cable of the battery holder.

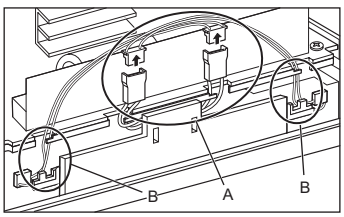
(Expanded figure of part A in 4)

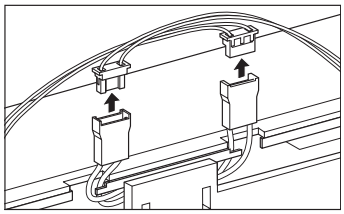




6 Disconnect the cable connector of the upper (H01) backlight and the cable connector of the lower (H02) backlight from the GOT side connectors.

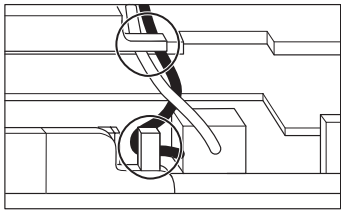
(Expanded figure of part A in 6)



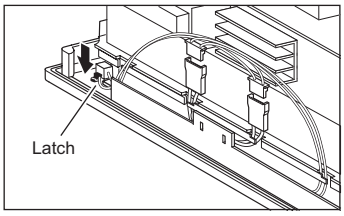


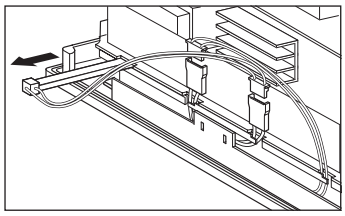
7 Remove the cables of the upper connector (H01) from the 2 slits (black).
Similarly, remove the cables of the upper connector (H02) from the 2 slits (black).

(Expanded figure of part B in 6)

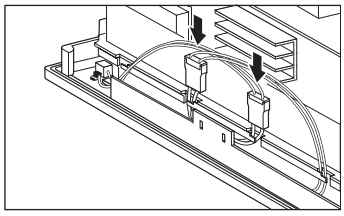


8 Press the upper backlight fixing latch (black) with your finger, and pull out the backlight to the left.
Similarly, press the lower backlight fixing latch (black) with your finger, and pull out the backlight to the left.





9 Mount a new backlight in the reverse procedure of removal.
When connecting the cable connectors of the backlight and the GOT unit, connect by crossing the cable connectors each other as the below.



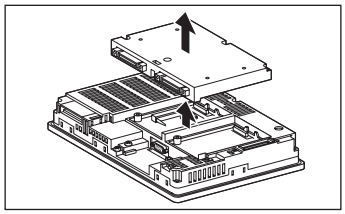
Also assemble the case in the reverse procedure of disassembly. (Tighten the GOT rear fixing screws within the torque range of 0.36 to 0.48N·m).
When mounting the case, take care of not biting the cables between the case and the GOT.

(2) Replacement 2

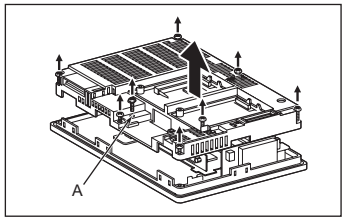
1 Power off the GOT.

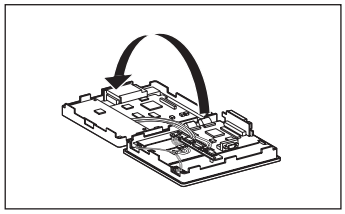
2 Disconnect the power supply cable and communication cable.
Remove the GOT from the control panel.

3 Remove the expansion unit cover on the right side of the GOT.
Remove the expansion unit, e.g. bus connection unit, if it is mounted.

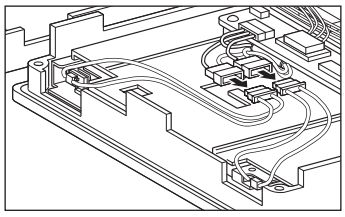


4 Remove the GOT rear fixing screws (8 pcs.) with a screwdriver, and remove the case.
Screw A must be tighten in the torque range of 0.186 to 0.245 N·m, as it is made of plastic.

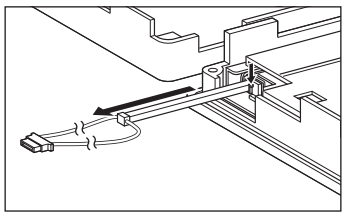




5 Disconnect the cable connector of the upper (H01) backlight and the cable connector of the lower (H02) backlight from the GOT side connectors.



6 Press the upper backlight fixing latch (black) with your finger, and pull out the backlight to the left.
Similarly, press the lower backlight fixing latch (black) with your finger, and pull out the backlight to the left.



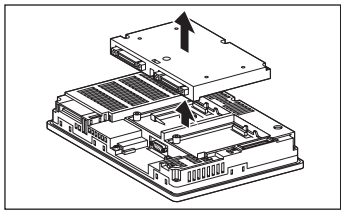
7 Mount a new backlight in the reverse procedure of removal.
Also assemble the case in the reverse procedure of disassembly. (Tighten the GOT rear fixing screws within the following torque range: Screw A: 0.186 to 0.245 N·m, Other screws: 0.36 to 0.48N·m.)
When mounting the case, take care of not biting the cables between the case and the GOT.

(3) Replacement 3

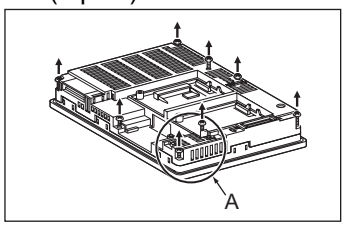
1 Power off the GOT

2 Disconnect the power supply cable and communication cable.
Remove the GOT from the control panel.

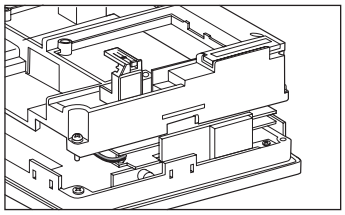
3 Remove the expansion unit cover on the right side of the GOT.
Remove the expansion unit, e.g. bus connection unit, if it is mounted.

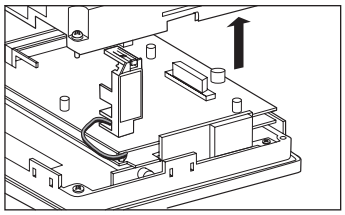


4 Remove the GOT rear fixing screws (8 pcs.) with a screwdriver.

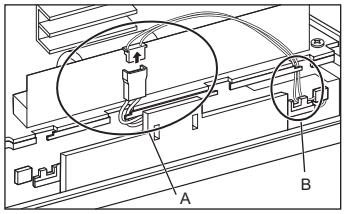


5 Remove the case after passing the battery holder through the mounting hole. When removing, take care of not cutting the cable of the battery holder.
(Expanded figure of part A in (4))

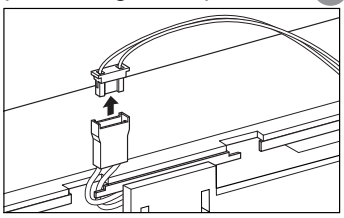




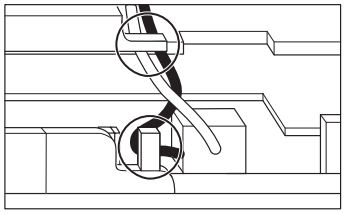
6 Disconnect the cable connector of the backlight from the GOT side connector.



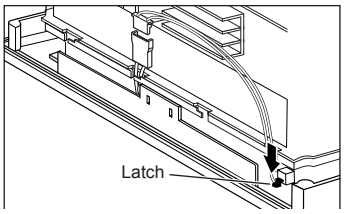
(Expanded figure of part A in 6)

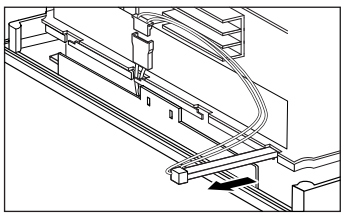


7 Remove the cables from the 2 slits (black).
(Expanded figure of part B in (6))

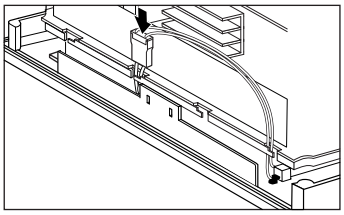


8 Press the backlight fixing latch (black) with your finger, and pull out the backlight to the left.





9 Mount a new backlight in the reverse procedure of removal.
When connecting the cable connector of the backlight to the GOT side connector, connect by it as shown below.



Also attach the case in the reverse procedure of removal. (Tighten the GOT rear fixing screws within the torque range of 0.36 to 0.48N·m).
When attaching the case, take care of not biting the cables between the case and the GOT.

20. ERROR MESSAGE AND SYSTEM ALARM

This chapter describes the error message and system alarm displayed in the GOT.
As the error code and error message displaying functions when an error occurs at the GOT, controller or network, there are two kinds: system alarm and advanced system alarm.
The error code can also be confirmed in the error code storage area of the system information function.
For details of system alarm, advanced system alarm and system information, refer to the following.

☞ GT Designer2 Version□ Screen Design Manual

20.1 Error Contents Display

This section describes the example for displaying error code and error message on GOT with advanced system alarm.

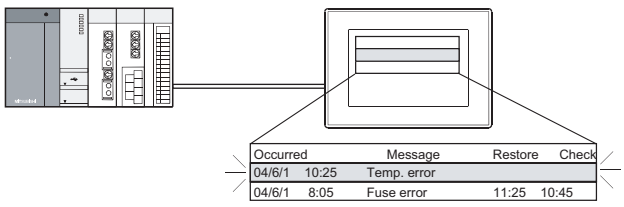
1 Popup-displaying the error code and error message

If an error occurs, the error code and error message can be popup-displayed on the front of the monitor screen.
As alarms are popup-displayed regardless of the screen type, the error occurred will not be overlooked.

Pop up generated alarms regardless of the screen.

2 Displaying error code and error message in a list.

If error has occurred, error code and error message can be displayed on the list set with the screen.
Multiple errors can be displayed, or the history of display can be recorded.



Create a screen to display alarms, and confirm the details of the alarms and take measures.

Error code and reference manual

Error source	Error code	Contents	Reference
Controller	0 to 99 (Value of D9008)	Error code of CPU (for ACPU)	User's manual of the ACPU connected with GOT
	100 to 299	Error code of the following controllers • FXCPU*1 • Third party PLC • Temperature controller (OMRON temperature controller only)	User's manual of the FXCPU connected with GOT When connecting a third-party PLC, deal with the error according to the error message.
GOT	300 to 399	Error code of the GOT main unit function	20.2 List of Error Message/ System Alarm
	400 to 499	Error code of the GOT communication function	
	500 to 699	Error code of the GOT main unit function	
Network	800 to 999	Error code of network	Reference manual of the network connected with GOT
CPU	1000 to 10000 (Value of SD0)	Error code of CPU (for QCPU, QnACPU)	User's manual of the QCPU and QnACPU connected with GOT
Servo amplifier	20016 to 20237	Error code of servo amplifier	User's manual of the servo amplifier connected to GOT

*1 The assigned error code for FXCPU is 100 to 109, which displays the status of M8060 to M8069.
(Example) When the error code (100) error occurs, correct the error according to the M8060 description.

*2 The error code displayed on GOT is calculated by changing the error code (Hexadecimal) displayed on the servo amplifier to the decimal number and adding 20000 to it.
When referring to the manual of servo amplifier by the error code displayed as a GOT system alarm, subtract 20000 from the GOT error code and change its lower three digits to the hexadecimal number.
(Example: When GOT system alarm is 20144, the error code of servo amplifier becomes 90H.)

20.2 List of Error Message/System Alarm

The system alarm detected with GOT is shown below.

Error code	Error message	Action
303	Set monitor points too large. Decrease setting points.	Decrease the number of objects from the displayed screen. For the number of maximum objects for 1 screen, refer to the following. ☞ GT Designer2 Version□ Screen Design Manual
304	Set trigger points too large. Decrease setting points.	The number of objects using Sampling/Cycle during ON/Cycle during OFF exceeds 100. Decrease the number of objects.
306	No project data. Download screen data.	The project data is not downloaded to the built-in flash memory. Download the project data to the built-in flash memory.
307	Monitor device not set	The monitor device of the object is not set. Set the monitor device of the object.
308	No comment data. Download comment.	The comment file does not exist. Create the comment file and download to GOT.
309	Device reading error. Correct device.	The error occurred when reading a continuous device. Correct the device.
310	Project data does not exist or out of range.	1. Specified base screen / window screen does not exist in the project data. 2. Specified base screen / window screen is out of the permissible area. Specify the existing base screen / window screen.
311	No. of alarm has exceeded upper limit. Delete restored alarm.	The number of alarm histories that can be observed by the alarm history display function has exceeded the maximum points. Delete the restored history to decrease the number of alarm histories.
312	No. of sampling has exceeded upper limit. Delete collected data.	The collection frequency exceeded the upper limit when "Store Memory" and "Accumulate/Average" were set in the scatter graph. 1. Approve "Clear trigger" setup in the scatter graph. 2. Set the "Operation at frequency over time" and "initialize and continue" in scatter graph.
315	Device writing error. Correct device.	Error occurred while writing in the device. Correct the device.
316	Cannot display or input operation value. Review expression.	In indirect specification of comment/parts number, the data operation result exceeded the range in which device type can be expressed. Review the data operational expression, in order not exceeding the range in which the device type can be expressed.
320	Specified object does not exist or out of range.	The part file does not exist. Create the part file and download to GOT.

Error code	Error message	Action
322	Dedicated device is out of range. Confirm device range.	The monitored device No. is out of the permissible area of the targeted PLC CPU. Set the device within the range that can be monitored by the monitored PLC CPU and parameter settings.
330	Insufficient memory media capacity. Confirm M-card capacity.	Available memory of the memory card is insufficient.Confirm the available memory of the memory card. The available memory can be confirmed by system information screen, which is described in GT Designer2 Version□ Screen Design Manual.
331	Memory card not installed or M-CARD switched OFF	The memory card is uninstalled or access switch is OFF in drive. 1. Install the memory card in the specified drive. 2. Turn ON the access switch.
332	Memory media is not formatted.	Memory card is not formatted or formatted incorrectly. Format the memory card.
333	Unable to overwrite. Memory card is write-protected.	Memory card is write-protected. Cancel the write-protection of memory card.
334	Memory media error. Replace memory media.	Memory card is faulty. Replace the memory card.
335	Memory card battery voltage low. Replace battery.	The battery voltage of the memory card is low. Replace the battery of the memory card.
340	Printer error or power failure	Printer is faulty or the printer power supply has not been turned on. 1. Confirm the printer. 2. Turn on the power supply of the printer.
341	Printer error	Printer is faulty or the printer power supply has not been turned on. 1. Confirm the printer. 2. Turn on the power supply of the printer.
342	KBF module fuse blown. Check the module or external power source.	Error occurred at the external I/O interface module. 1. If an external power supply (24VDC) is not supplied, supply the external power supply. 2. If an external power supply is supplied, replace the external I/O interface module.
343	KBF module status error. Load KBF module properly.	The external I/O interface module is not installed correctly. Install the external I/O interface module correctly.
345	BCD/BIN conversion error Correct data	The BCD/BIN conversion disabled data is being displayed/ input. 1. Change the device data to be displayed to the BCD value. 2. Correct the input value to the 4 digits integer.
351	Recipe file error. Confirm content of recipe file.	The contents of the recipe file are not normal.B 1. Confirm the contents of the recipe files in the memory card. 2. Reboot the GOT after deleting the recipe file in the memory card (format).

Error code	Error message	Action
352	Recipe file make error. Reboot GOT after inserting memory card.	Failed to generate recipe file. Reboot the GOT after installing the memory card.
353	Unable to write Recipe file. Confirm memory card is inserted.	Failed to write in the recipe file. 1. Confirm the write-protection of the memory card. 2. Confirm the contents of the memory card. 3. Do not pull out the memory card while recipe is operating.
354	Recipe file write error	Error occurred while writing in the recipe file. Do not unplug the memory card while recipe is operating.
355	Recipe file read error	Error occurred while writing in the recipe file. 1. Do not unplug the memory card while recipe is operating. 2. Confirm the contents (device value) of the recipe file in the memory card.
356	File system error occurred in PLC. Confirm file register.	Error occurred in the specified file register when executing the recipe function by specifying the file register name. 1. Execute the recipe function again after confirming the file register name. 2. Execute the recipe function again after formatting the PC memory in the specified PLC CPU drive with GX Developer.
357	Error in specified PLC drive Confirm PLC drive	When executing the recipe function specifying the file register name, error occurred in PLC CPU drive. 1. Execute the recipe function again after confirming the specified PLC CPU drive. 2. Execute the recipe function again after formatting the PC memory in the specified PLC CPU drive with GX Developer.
358	PLC file access failure. Confirm PLC drive.	When the recipe function is executed specifying the file register name, PLC CPU file register could not be accessed. 1. Execute the recipe function again after confirming the specified PLC CPU drive / file register name. (When you specify drive 0, execute the recipe function again after changing to other drives.) 2. Confirm whether the memory card is write-protected, and execute the recipe function again.
359	Processing from another peripheral device. Execute it after.	When the recipe function is executed specifying the file register name, other peripherals carry out the process to the file register. Wait until the processing of other peripherals end, and execute the recipe function again.
360	0 divisor division error. Confirm operation expression.	Division 0 was generated by the data operational expression. Review the data operational expression so that the divisor should not become 0.
370	Upper and lower limit value error. Confirm value setting.	The setting of lower/upper limit value is [Upper limit < Lower limit]. Correct the setting so as to be "Upper limit ≥ Lower limit".

Error code	Error message	Action
402	Communication timeout. Confirm communication pathway or modules.	The time-out error occurred during communicating. 1. Confirm the cable omission, the communication module mounting status and status of the PLC. Channel No. is not displayed in error code or error message in the case an error occurs when using the multi-channel function. Refer to the following manual to identify the channel No. in error. ☞ GOT1000 Series Connection Manual (Description of "Checking for normal monitoring" of each connection type) 2. This error may occur when the load of PLC CPU becomes heavier while accessing other stations. In such case, transfer the data of the other station to the host station PLC CPU to be monitored by host. 3. Put COM instruction when the PLC scanning is long.
403	SIO status error. Confirm communication pathway or modules.	Either of the overrun error, parity bit error or flaming error was generated when the RS-422 / RS-232 communication was received. Confirm the cable omission, the communication module mounting status, status of the PLC.and the transmission speed of the computer link. Channel No. is not displayed in error code or error message in the case an error occurs when using the multi-channel function. Refer to the following manual to identify the channel No. in error. ☞ GOT1000 Series Connection Manual (Description of "Checking for normal monitoring" of each connection type)
406	Specified station access is out of range. Confirm station no.	1. Station numbers other than master/local station are specified at the CC-Link connection (via G4). 2. Accessed PLC CPUs other than QCPU. Confirm the station number of the project data.
407	Accessed other network by NET/10 unit. Change network setting.	Accessed other networks (Network other than MELSECNET/10) at the MELSECNET/10 connection (PLC to PLC network). Confirm Network No. of the project data, in order for not accessing other networks.
410	Cannot perform operation because of PLC run mode. stop the PLC.	The operation, which could not be performed during RUN of PLC CPU, was performed. Stop the PLC CPU.
411	Memory cassette is write-protected. Check the memory cassette.	The memory cassette installed in PLC CPU is in the state protected with EPROM or E^2PROM. Confirm the memory cassette installed in PLC CPU.
412	Cannot read/write device protected by keyword. Remove keyword.	The key word is set in PLC CPU. Cancel the key word.
420	E71 specification is ASCII.	The E71 is specifying ASCII.

Error code	Error message	Action
421	E71 is set as read-only. Clear setting.	The Ethernet module on the PLC side is set in read-only. Set the Ethernet module on the PLC side to write-enabled.
422	Not communicating between CPU and E71. Confirm CPU error.	PLC CPU error. Communication between PLC CPU and the PLC side Ethernet module impossible. Confirm whether there is error in PLC CPU by GX Developer etc. (Confirm buffer memory)
423	Insufficient network table information. Add station no.	The station number set in the Ethernet setting of GT Designer2 with the project data does not exist. Add the station number set to the Ethernet setting of GT Designer2 with the project data. (Set the station number so that it becomes the same as the station number of the PLC CPU side Ethernet module set by the parameter of GX developer.)
424	Same sta. on GOT & project data. Review communication parameter.	The station number set in the GOT's utility is the same as the station number set by the GT Designer2 Ethernet setting (the station number of the PLC side Ethernet module) or by the project data. Confirms the following contents so that the multiple station numbers should not be the same. 1. Confirm the station number of GOT by the utility of GOT. 2. Confirm the station number set by the project data. 3. Confirm the station number set by the Ethernet setting. (Set by the parameter of GX Developer.)
448	PLC cannot handle as requested. Correct devices.	The file register of QnACPU and the device beyond the outside range of buffer memory was specified. Correct the monitor device by setting file register of PLC CPU.
480	Communication channel not set. Set channel number on Utility.	Channel (CH.No.1 to 4) to communicate with a controller is not set. 1. After setting the Communication Settings on the GT Designer2, download it to the GOT. 2. Change the channel assignment in the Communication Setting on the utility.
481	Communication unit not mounted to the slot of active channel.	The interface where the channel (CH No.1 to 4) is set has not a communication unit installed. 1. Install a communication unit to the interface where the channel (CH No.1 to 4) is set. 2. Change assignment of the channel (CH No.1 to 4) in the Communication Setting.
482	Too many same units are mounted. Confirm the no of units.	Units are mounted on the GOT exceeding the maximum number of mountable units. Check the number of units, and remove unnecessary units.
483	Simultaneous mounting of the units are not allowed.	Two or more units which cannot be mounted on the GOT simultaneously are mounted. Check the mounted units, and remove unnecessary units.
484	Unit mounted incorrectly. Move the unit to correct position.	The unit is not mounted on the GOT in the correct position. Confirm the mounting position of the unit.

Error code	Error message	Action
485	Too many units mounted on GOT. Reduce units.	Units are mounted on the GOT exceeding the maximum number of mountable units. Check the number of units, and remove unnecessary units.
486	Communication unit not corresponded to set communication driver.	The communication driver set in the Communication Setting and the communication unit installed on the GOT do not match. 1. Check whether the communication driver set in the Communication Setting is correct. 2. Check whether any incorrect communication unit has been installed on the GOT.
487	Please turn on the PLC and the GOT again.	Turn the power of the PLC and GOT on again.
488	Too many units mounted on GOT. Reduce units.	Units are mounted on the GOT exceeding the maximum number of mountable units.Check the number of units, and remove unnecessary units.
489	Inactive channel has been selected at Communication Settings.	Inactive channel No. has been set in the project data. 1. Check whether any unnecessary channel No. has been set in the project data. 2. Check whether channel Nos. set in the project data are set in the Communication Settings.
490	Simultaneous mounting of the units are not allowed.	Two or more units which cannot be mounted on the GOT simultaneously are mounted.Check the mounted units, and remove unnecessary units.
491	Too many units mounted on GOT. Reduce units.	Units are mounted on the GOT exceeding the maximum number of mountable units.Check the number of units, and remove unnecessary units.
500	Warning! Built-in battery voltage is low.	The voltage of the GOT built-in battery is decreased. Replace the GOT built-in battery.
502	Warning! Backlight needs replacement soon.	User notifies the backlight power on addition time that reaches more than 80% of setting time with the dedicated GS. GOT can be restored by executing the addition times reset function after replacing the backlight. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
503	Warning! Display section needs replacement soon.	User notifies the display section power on addition time which reaches to more than 80 % of the setting time with the dedicated GS. GOT can be restored by executing the addition times reset function after replacing the display section. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.

Error code	Error message	Action
504	Warning! Touch panel needs replacement soon.	User notifies the touching count of the touch key that reaches to more than 80 % of the setting time with the dedicated GS. GOT can be restored by executing the addition times reset function after replacing the touch key. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
505	Warning! Built-in Flash ROM needs replacement soon.	User notifies the built in flash memory writing times which reaches to more than 80 % of the setting time with the dedicated GS. The GOT must be replaced. In that case, the data backup and the reestablishment of data are needed. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
506	Warning! Backlight needs replacement.	User notifies the backlight power on addition time that reaches more than setting time with the dedicated GS. GOT can be restored by executing the addition times reset function after replacing the backlight. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
507	Warning! Display section needs replacement.	User notifies the display section power on addition time which reaches to more than the setting time with the dedicated GS. GOT can be restored by executing the addition times reset function after replacing the display section. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
508	Warning! Touch panel needs replacement.	User notifies the touching count of the touch key that reaches to more than the setting time with the dedicated GS. GOT can be restored by executing the addition times reset function after replacing the touch key. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
509	Warning! Built-in Flash ROM needs replacement. Change the GOT.	User notifies the built in flash memory writing times which reaches to more than the setting time with the dedicated GS. The GOT must be replaced. In that case, the data backup and the reestablishment of data are needed. Moreover, GOT can also be restored by turning off the notification signal manually. In such case, turn it OFF after changing the setting value to the integrated value or more.
510	Clock data input out of range	The value that is input as clock data is out of the input enabled range. In this case, the input value is not accepted. Confirm the input range of the value to be input as clock data, and input the proper value again.

Error code	Error message	Action
520	Insufficient Flash ROM capacity	The capacity for the buffering area is insufficient in the build in flash memory 1. Confirm whether there are no mistakes in specified buffering area size. 2. Install the option function board with add-on memory.
521	Insufficient user memory (RAM) capacity	The capacity for the buffering area is insufficient in the user memory (RAM) 1. Confirm whether there are no mistakes in specified buffering area size. 2. Install the option function board with add-on memory.
522	Unnecessary file deleted to create new file.	Cancelled the file of different contents and created a new file. Note that the old file is cancelled and the new file is created if the file of the same name with different contents exists when creating files.
524	Device writing error. Correct device.	When writing in the device, error occurred. Correct the device.
525	Unable to read/write alarm log files under different projects.	Unable to read the alarm log file saved by the different project. Confirm where to store the alarm log file and alarm log file.
530	Improper monitor device. Confirm monitor channel.	The channel of the specified monitor target does not exist or the channel is not the monitor target. Confirm the monitor target channel of the screen data.
535	Cannot open image file.	1. Confirm whether the memory card is installed. 2. Confirm whether the CF card access switch of the GOT is ON. 3. Confirm whether any file exists in the memory card.
536	Image file error or invalid file format.	1. Confirm whether the image file in the memory card is normal. 2. Confirm whether any image file of invalid format is stored.
540	Auto repeat error. Confirm system information.	Error occurred while executing the auto repeat function of the touch switch object. Confirm the followings. 1. Confirm that the other system error has not occurred during auto repeat 2. Confirm that any error information is not stored in the system information/GS during auto repeat.
550	Invalid key code	The key code input execution trigger was ON with the non-target key code set in the key code storage device. Confirm the key code supported by the object where error occurs.
560	Language switch failure. Install optional functions.	Switched language specifying KANJI other than Japanese without the option function installed. Install the option function
561	Language switch failure. Load expansion memory board.	Switched language specifying a KANJI region other than Japanese without the option function board with add-on memory installed. Install the option function board with add-on memory.
570	Recipe device points too large.	The number of the set points of the recipe device exceeds the specified range. Put the number of the set points of the recipe device within the specified range.

Error code	Error message	Action
571	Capacity shortage of user memory (RAM)	There is no empty area/space in D drive. Format the D drive in the memory to secure free area.
581	Abnormal Advanced recipe file	Advanced Recipe cannot be executed for advanced recipe file with incorrect contents. Delete the advanced recipe file from the memory card.
582	Cannot generate Advanced recipe file.	Cannot generate advanced recipe file. Confirm the following and execute recipe processing again. 1. Confirm whether the memory card is installed. 2. Confirm whether the CF card access switch of the GOT is ON. 3. Confirm the available memory of the memory card.
583	Unable to save device value to Advanced recipe file.	Unable to save device value to advanced recipe file. 1. Confirm the write-protection of memory card. 2. Confirm whether the attribute of saving file is for reading only.
584	Advance recipe file save error	An error has occurred during the advanced recipe file writing. Do not pull the memory card out while the Advanced Recipe is operating.
585	Advanced recipe file upload error	An error has occurred during the advanced recipe file reading. Do not pull the memory card out while the Advanced Recipe is operating.
586	Specified Advanced recipe number does not exist.	The advanced recipe of non-existing number is about to be executed. Execute advanced recipe of existing number.
587	Specified record number does not exist.	The advanced record of non-existing number is about to be executed. Execute record of existing number.
588	Cannot save recipe data to read only record.	Saving recipe is about to be executed to the record of which recipe device value cannot be edited. Make the recipe device value of the record editable with Advanced Recipe Setting of GT Designer2 or specify the record of which recipe device value can be edited.
589	Recipe device save error. Recipe file does not exist.	Saving recipe is about to be executed to the advanced recipe setting that is set for not using file. Specify the advanced recipe setting that uses file.
590	Recipe device upload error. Recipe device value does not exist.	Loading recipe is about be executed to the record of which recipe device value is not set. Specify the record of which recipe device value is set.
591	Advanced Recipe error. Check recipe data.	The advanced recipe setting is not correct. Confirm the advanced recipe setting of the project data and download it to the GOT again.
595	Logging file error.	Logging file error. When collecting data again, delete logging files and management files.
596	Logging setting does not exist or setting value error.	The logging setting specified in the historical trend graph setting does not exist. Review the historical trend graph setting and specify a logging setting that exists.

20.3 Troubleshooting in Bus Connection

When connect GOT and PLC CPU with bus connection, and the cause is not clear in "20.2 List of Error Message/System Alarm", execute the following troubleshooting.
Refer to the following for details concerning the bus connection.

☞ GOT1000 Series Connection Manual

20.3.1 Locating error positions

Explanation regarding the method of specifying the error part.
(Please refer to User's Manual of used PLC CPU for details related to the PLC CPU error and special register.)

(1) How to locate error positions:

(a) Use of peripheral devices
Using the peripheral devices such as GX Developer, check what type of the error occurs on the PLC CPU and, based on the error message on the PLC CPU, check each module and cable for installation and earthing statuses.

(b) Error timing
Check the timing of errors.
1) An error occurs when the power is turned on or immediately after the PLC is reset:
The error may be detected by the initial processing of the PLC CPU.
In this case, because the faulty module may not be identified, use only an END instruction for the sequence program and remove the modules one by one until the error does not occur.
When the error is eliminated after a specific module has been removed, the module may be causing the error.

2) An error occurs after a specific operation or several seconds:
The error may occur in the sequence program. Check the error step where the error may occur and the sequence program in that step.
The sequence program can be diagnosed throughout by merely using an END instruction for the sequence program.

3) An error occurs when a specific device operates:
The mis-operation may be caused by noise.
Check that any signal line such as bus cable is not laid out too close to the operating device.
If the line is too close to the device, separate the line 100 mm or more from the device.

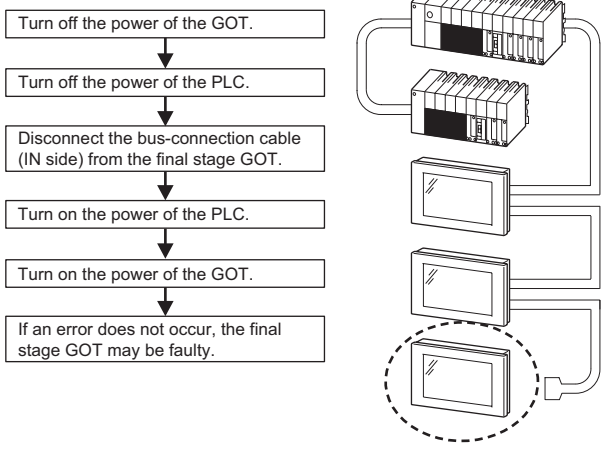
(c) Locating the module where an error occurs:
Based on the PLC CPU error codes and special resister information, locate a specific module where an error occurs.

By the method stated above, correct the sequence program or replace the faulty module with a new one, and check whether the error occurs.
If the error continues to occur, it may have another cause.
Referring to 20.3.2 "Further locating error positions", locate the error position further.

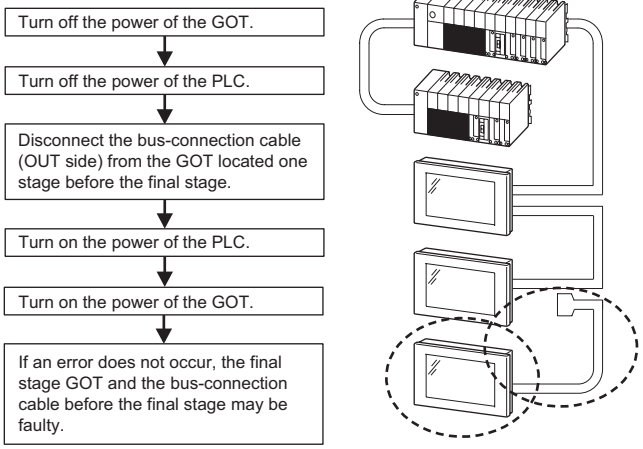
20.3.2 Further locating error positions

If the function of the PLC cannot be recovered even when the module on which an error occurs is replaced with a new one, the error may be caused by the effect from another module.
Disconnect the extension cables and bus connection cables in order from the modules starting from the module located furthest from the operating position in the system, and check for the status of occurrence of the error each time the cables are disconnected until the error does not occur.
The module or extension cables/bus-connection cables disconnected immediately before the error does not occur are considered to cause the error.
Examples of the ways of further locating error positions are shown below. (When use the extension base unit QnASCPU)

Example 1:


Turn off the power of the GOT.
Turn off the power of the PLC.
Disconnect the bus-connection cable (IN side) from the final stage GOT.
Turn on the power of the PLC.
Turn on the power of the GOT.
If an error does not occur, the final stage GOT may be faulty.

Example 2:


Turn off the power of the GOT.
Turn off the power of the PLC.
Disconnect the bus-connection cable (OUT side) from the GOT located one stage before the final stage.
Turn on the power of the PLC.
Turn on the power of the GOT.
If an error does not occur, the final stage GOT and the bus-connection cable before the final stage may be faulty.

Repeat the examples 1 and 2 above to locate error positions.

Point

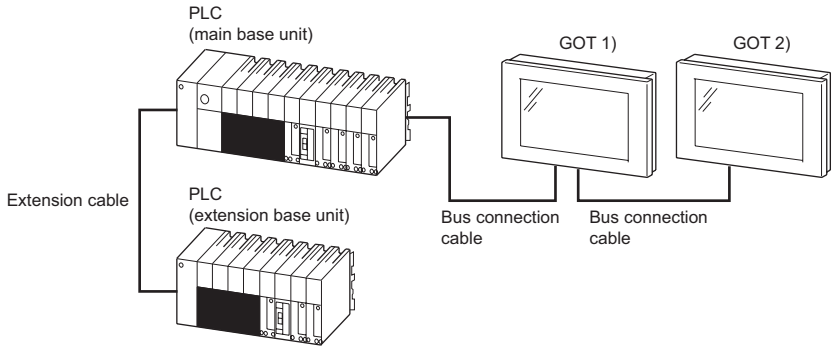
Notes on narrowing the error part range

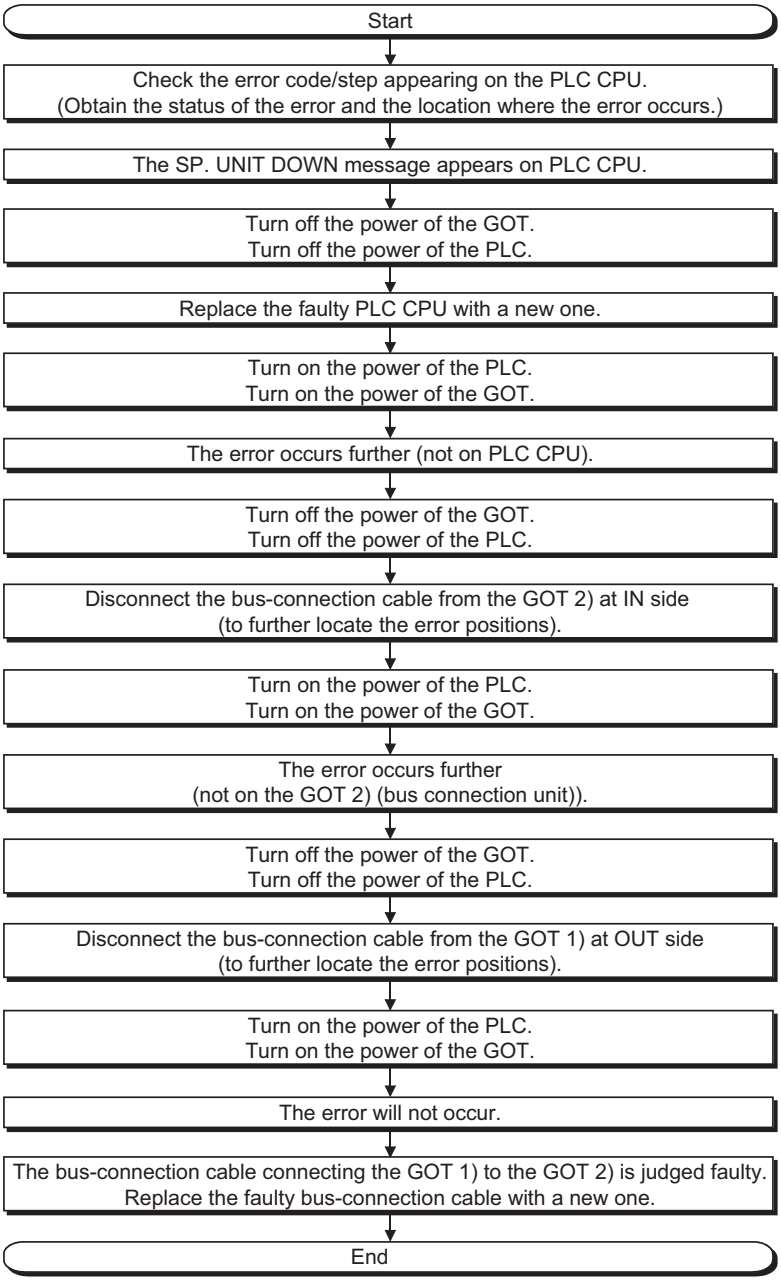
1. When disconnecting the extension base units in order, use only an END instruction for the sequence program, and any error resulting from the sequence program will not occur, and the status of occurrence of errors will be obtained easily.
2. When the frequency of occurrence of an error is low, check the error by taking a rather long time with the modules disconnected.

The checks stated above are effective to locate a noise invading route when the mis-operation is caused by noise.

20.3.3 Specific example of troubleshooting

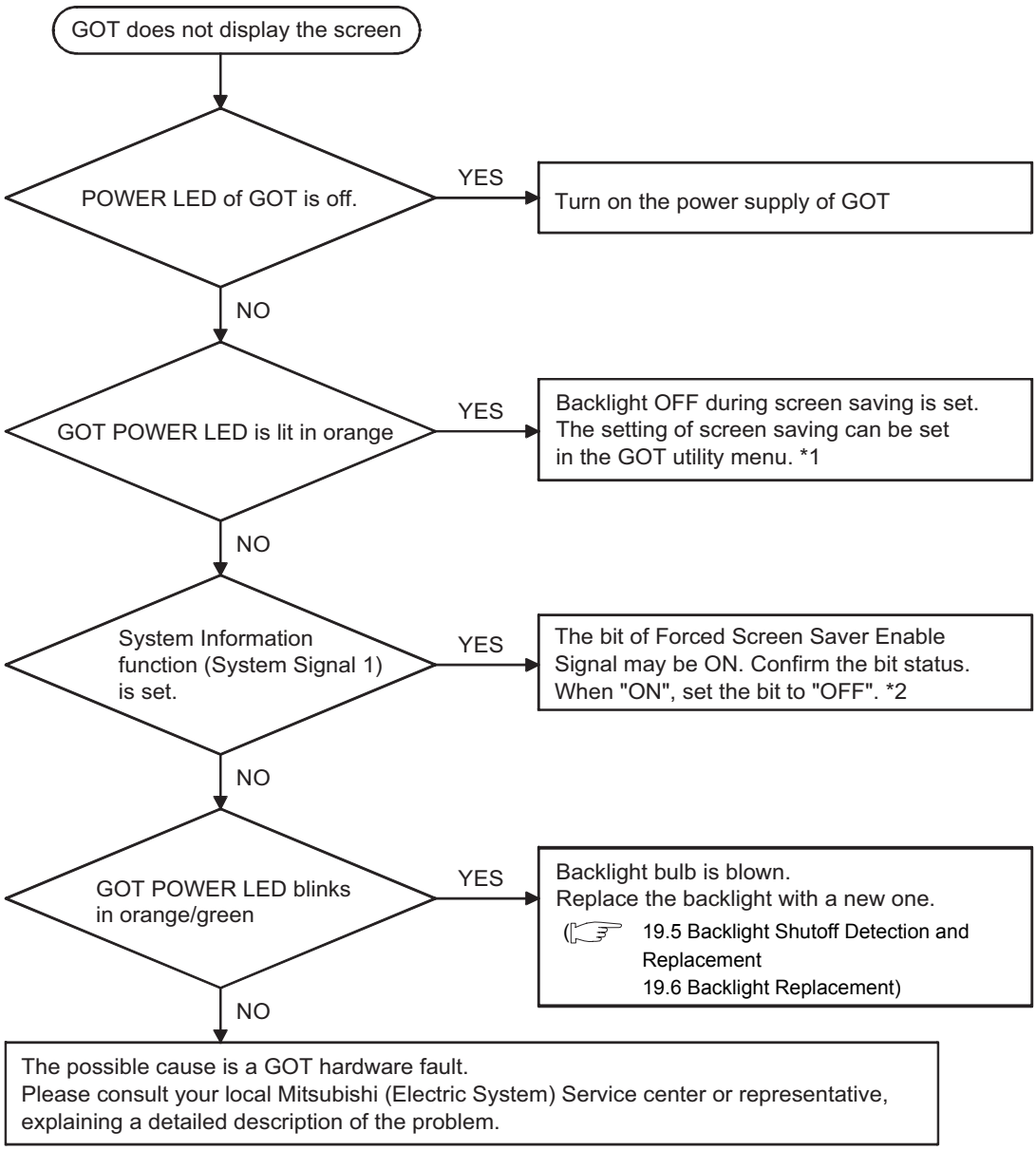
Taking the following system as an example, troubleshooting is shown when PLC CPU error occurred. (When QnASCPU and the extension base unit are used)




Start
Check the error code/step appearing on the PLC CPU.
(Obtain the status of the error and the location where the error occurs.)
The SP. UNIT DOWN message appears on PLC CPU.
Turn off the power of the GOT.
Turn off the power of the PLC.
Replace the faulty PLC CPU with a new one.
Turn on the power of the PLC.
Turn on the power of the GOT.
The error occurs further (not on PLC CPU).
Turn off the power of the GOT.
Turn off the power of the PLC.
Disconnect the bus-connection cable from the GOT 2) at IN side
(to further locate the error positions).
Turn on the power of the PLC.
Turn on the power of the GOT.
The error occurs further
(not on the GOT 2) (bus connection unit)).
Turn off the power of the GOT.
Turn off the power of the PLC.
Disconnect the bus-connection cable from the GOT 1) at OUT side
(to further locate the error positions).
Turn on the power of the PLC.
Turn on the power of the GOT.
The error will not occur.
The bus-connection cable connecting the GOT 1) to the GOT 2) is judged faulty.
Replace the faulty bus-connection cable with a new one.
End

20.4 Troubleshooting for Monitoring

This section describes the countermeasures when GOT does not display the monitor screen.


GOT does not display the screen
POWER LED of GOT is off.
YES
Turn on the power supply of GOT
NO
GOT POWER LED is lit in orange
YES
Backlight OFF during screen saving is set.
The setting of screen saving can be set
in the GOT utility menu. *1
NO
System Information
function (System Signal 1)
is set.
YES
The bit of Forced Screen Saver Enable
Signal may be ON. Confirm the bit status.
When "ON", set the bit to "OFF". *2
NO
GOT POWER LED blinks
in orange/green
YES
Backlight bulb is blown.
Replace the backlight with a new one.
(☞ 19.5 Backlight Shutoff Detection and
Replacement
19.6 Backlight Replacement)
NO
The possible cause is a GOT hardware fault.
Please consult your local Mitsubishi (Electric System) Service center or representative,
explaining a detailed description of the problem.

*1 For utility menu, refer to the following.

☞ 11. DISPLAY AND OPERATION SETTINGS (GOT SET UP)

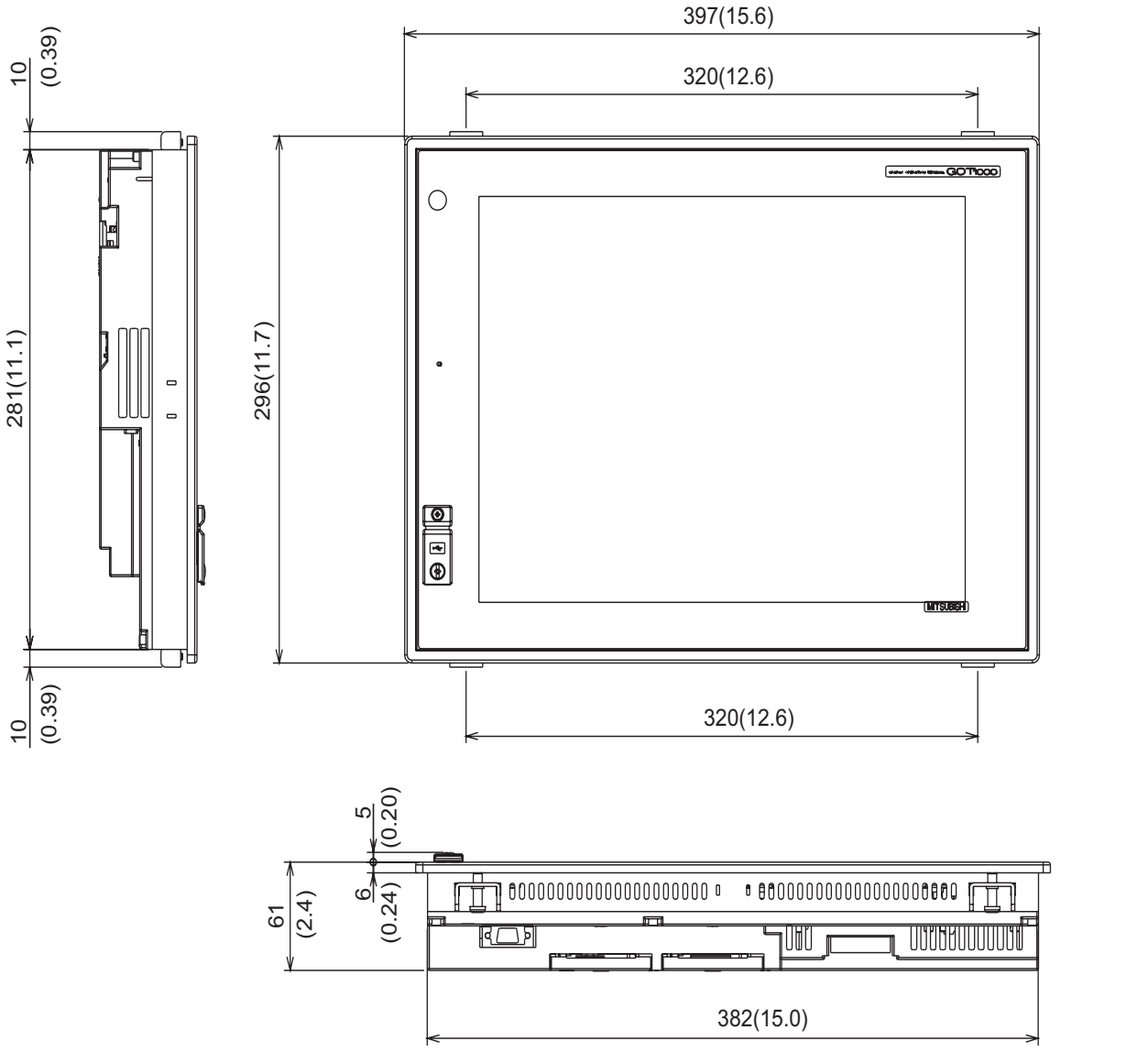
*2 For the details of the forced screen saver enable signal, refer to the following.

☞ GT Designer2 Version☐ Screen Design Manual

APPENDICES

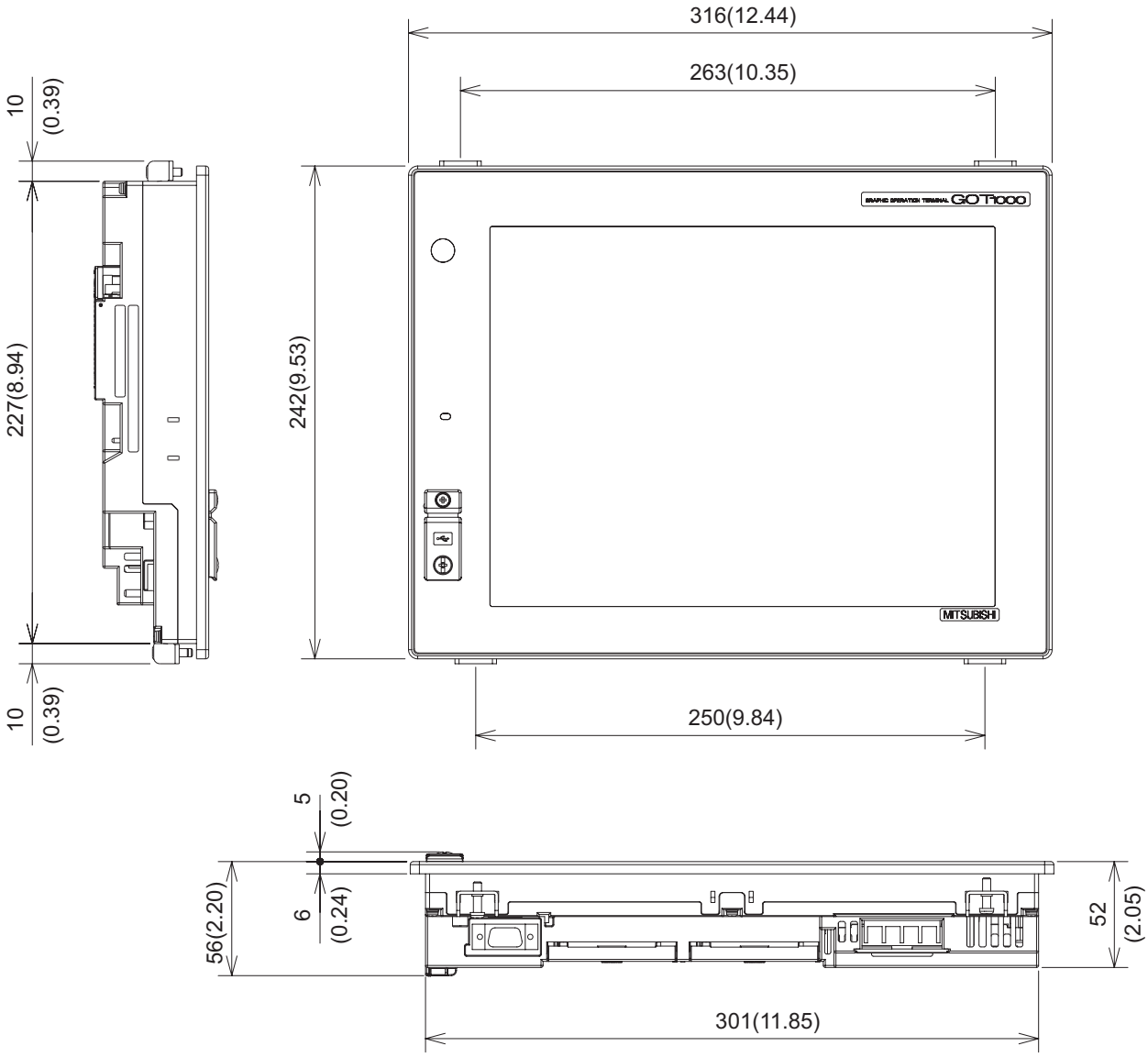
Appendix 1 External Dimensions

(1) GT1595



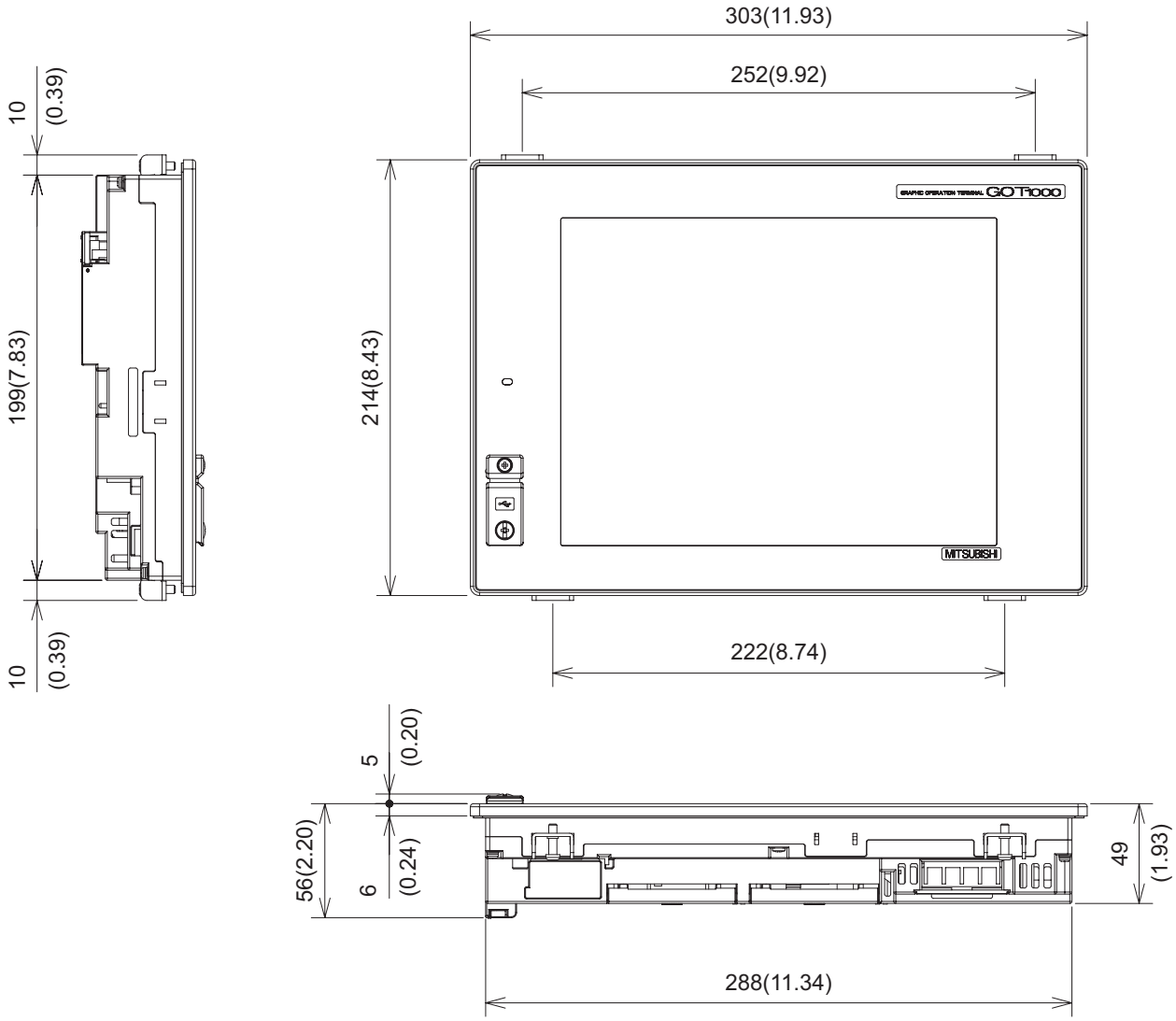
Unit:mm(inch)

(2) GT1585



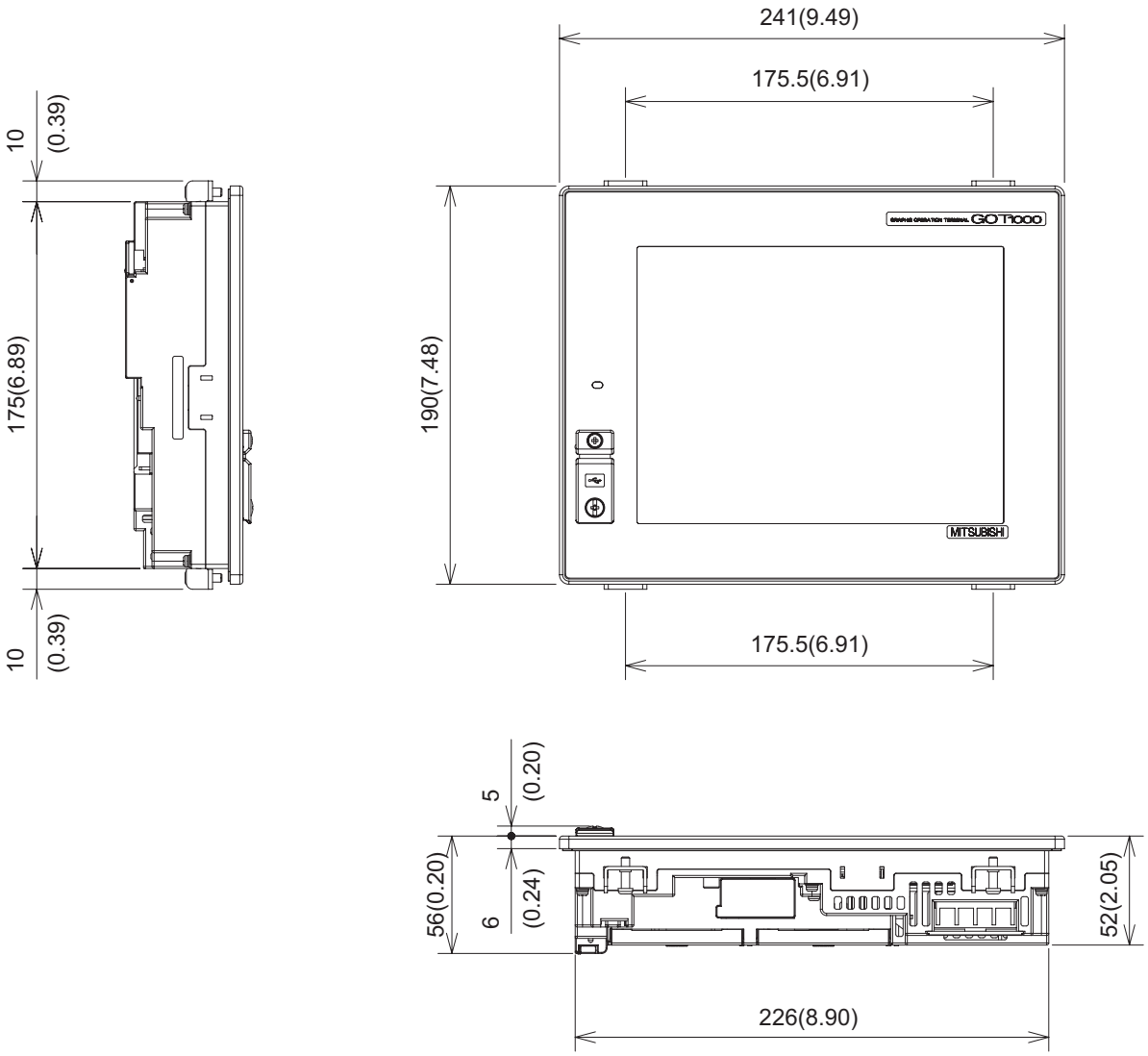
Unit: mm (inch)

(3) GT157 □



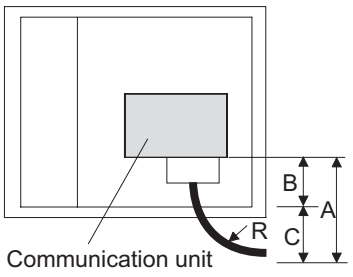
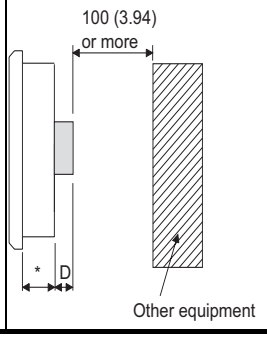
Unit: mm (inch)

(4) GT156 □



Unit: mm (inch)

(5) Depth at the time of communication unit loading

GOT rear face	GOT side face
	

GOT type	Dimension of *
GT1595	55 (2.17)
GT1585	46 (1.81)
GT157 ☐	43 (1.69)
GT156 ☐	46 (1.81)

Unit: mm (inch)

(a) GT1595

Communication unit model name	A	B	C	D	R (bending radius of the cable)
GT15-QBUS, GT15-QBUS2	95(3.74)	123(4.84)	0(0)	21(0.83)	55(2.17)
GT15-ABUS, GT15-ABUS2	73.5(2.89)				36(1.42)
GT15-75QBUSL, GT15-75QBUS2L	95(3.74)			8(0.32)	55(2.17)
GT15-75ABUSL, GT15-75ABUS2L	73.5(2.89)				36(1.42)
GT15-RS2-9P*1, GT15-RS4-9S*1	72.5(2.85)			21(0.83)	30(1.18)
GT15-RS4-TE*1	33.5(1.32)				
GT15-J71E71-100	38(1.5)*2		-		24(0.95)
GT15-75J71LP23-Z	*3	130(5.12)	*3	45.5(1.79)	*3
GT15-75J71BR13-Z	80(3.15)		0(0)		50(1.97))
GT15-75J61BT13-Z					

Unit: mm (inch)

(b) GT1585

Communication unit model name	A	B	C	D	R (bending radius of the cable)
GT15-QBUS, GT15-QBUS2	95(3.74)	64(2.52)	28(1.1)	18(0.71)	55(2.17)
GT15-ABUS, GT15-ABUS2	73.5(2.89)		8.5(0.34)		36(1.42)
GT15-75QBUSL, GT15-75QBUS2L	95(3.74)		28(1.1)	5(0.2)	55(2.17)
GT15-75ABUSL, GT15-75ABUS2L	73.5(2.89)		8(0.32)		36(1.42)
GT15-RS2-9P*1, GT15-RS4-9S*1	72.5(2.85)		9.5(0.37)	18(0.71)	30(1.18)
GT15-RS4-TE*1	33.5(1.32)		0(0)		
GT15-J71E71-100	38(1.5)*2		-		24(0.95)
GT15-75J71LP23-Z	*3		*3	45.5(1.79)	*3
GT15-75J71BR13-Z	80(3.15)		16(0.63)		50(1.97)
GT15-75J61BT13-Z					

Unit: mm (inch)

(c) GT157 □

Communication unit model name	A	B	C	D	R (bending radius of the cable)
GT15-QBUS, GT15-QBUS2	95(3.74)	50(1.97)	42(1.65)	21(0.83)	55(2.17)
GT15-ABUS, GT15-ABUS2	73.5(2.89)		22.5(0.89)		36(1.42)
GT15-75QBUSL, GT15-75QBUS2L	95(3.74)		42(1.65)	8(0.32)	55(2.17)
GT15-75ABUSL, GT15-75ABUS2L	73.5(2.89)		22(0.87)	8(0.32)	36(1.42)
GT15-RS2-9P*1, GT15-RS4-9S*1	72.5(2.85)		23.5(0.93)	21(0.83)	30(1.18)
GT15-RS4-TE*1	33.5(1.32)		0(0)		
GT15-J71E71-100	38(1.5)*2		-		24(0.95)
GT15-75J71LP23-Z	*3	47(1.85)	*3	45.5(1.79)	*3
GT15-75J71BR13-Z	80(3.15)		33(1.3)		50(1.97))
GT15-75J61BT13-Z					

Unit: mm (inch)

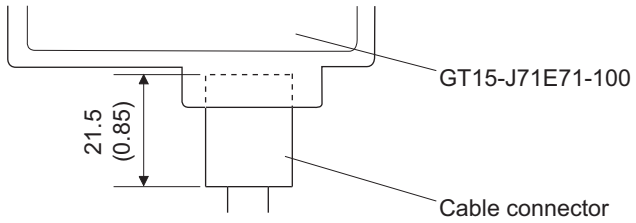
(d) GT156 □

Communication unit model name	A	B	C	D	R (bending radius of the cable)
GT15-QBUS, GT15-QBUS2	95(3.74)	45(1.77)	47(1.85)	23(0.91)	55(2.17)
GT15-ABUS, GT15-ABUS2	73.5(2.89)		27.5(1.08)		36(1.42)
GT15-75QBUSL, GT15-75QBUS2L	95(3.74)		47(1.85)	10(0.39)	55(2.17)
GT15-75ABUSL, GT15-75ABUS2L	73.5(2.89)		27(1.12)		36(1.42)
GT15-RS2-9P*1, GT15-RS4-9S*1	72.5(2.85)		28.5(1.12)	23(0.91)	30(1.18)
GT15-RS4-TE*1	33.5(1.32)		0(0)		
GT15-J71E71-100	38(1.5)*2		-		24(0.95)
GT15-75J71LP23-Z	*3	42(1.65)	*3	47.5(1.87)	*3
GT15-75J71BR13-Z	80(3.15)		38(1.5)		50(1.97))
GT15-75J61BT13-Z					

Unit: mm (inch)

*1 For cables prepaired by the user, the dimensions are different.

*2 This dimension is applied when the external dimension of cable connector is 21.5mm. (Refer to the following figure.) The dimension varies depending on the connector used.



*3 For cable details of GT15-75J71LP23-Z (Optical loop unit), consult the local office of Mitsubishi Electric System & Service, Co., Ltd.

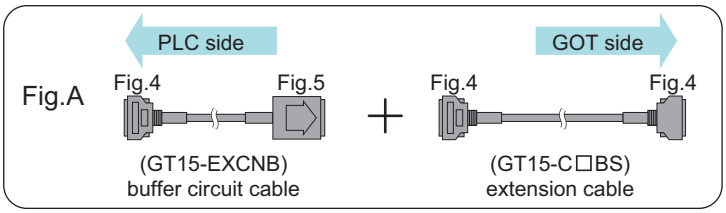
(6) External dimensions of the communication cable
External dimensions of the bus connection cable connector

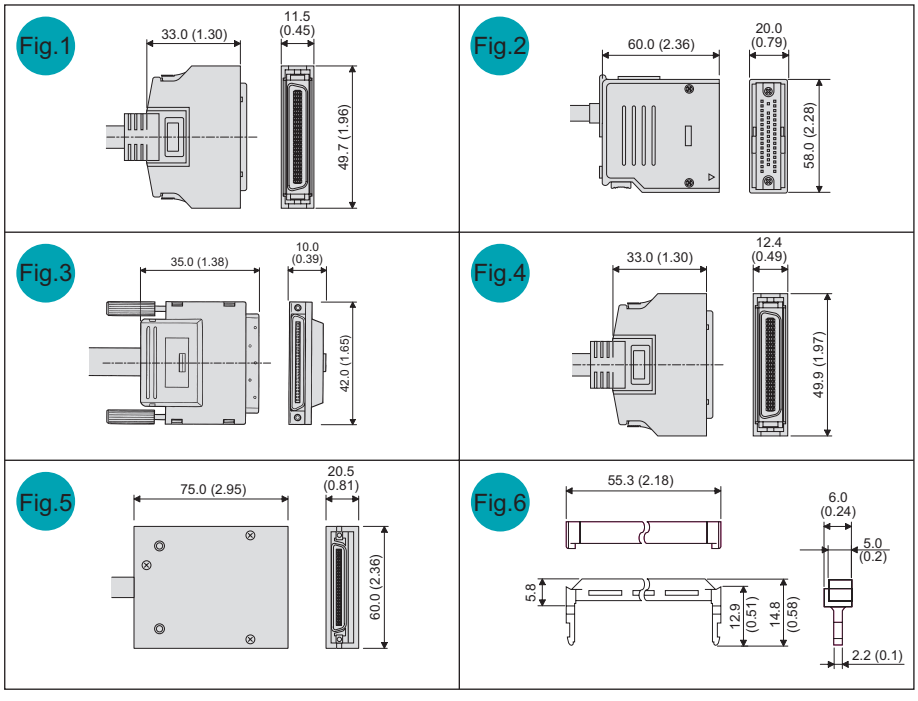
Cable model	Cable length (m(ft.))	Dimensions (mm) and shape of the connector	
		GOT side	PLC side
GT15-QC□B	0.6(2), 1.2(3.9),3(10),5(20), 10(33)	Fig. 3	Fig. 3
GT15-QC□BS	15(49),20(66),25(82),30(98),35(120)	Fig. 3	Fig. 3
GT15-C□NB	1.2(3.9),3(10),5(20)	Fig. 1	Fig. 2
GT15-AC□B	0.6(2), 1.2(3.9),3(10),5(20)	Fig. 2	Fig. 2
GT15-A1SC□B	0.7(2), 1.2(3.9),3(10) 5(20)	Fig. 1	Fig. 1
GT15-A1SC□NB	0.45(1.5),1.2(3.9),3(10),5(20)	Fig. 4	Fig. 2
GT15-J2C□B	1(3)	Fig. 1	Fig. 6
GT15-370C□B-S1	1.2(3.9),2.5(8.2)	Fig. 4	Fig. 4
GT15-C□EXSS-1	10.6(34.8),20.6(67.6),30.6(100)	Fig. 4	Fig. 4
GT15-C□BS	10(33),20(66),30(98)	Fig. 4	Fig. 4
GT15-EXCNB	0.5(2)	Fig. 5	Fig. 4

*1: The GT15-C□EXSS/GT15-C□BS cable has a grounding wire (1 m).
Be sure to connect the wire to control panels.

*2: The GT15-C□EXSS-1 is the set product consisting of (GT15-EXCNB+GT15-C□BS). (Refer to Fig. A)

Fig.A

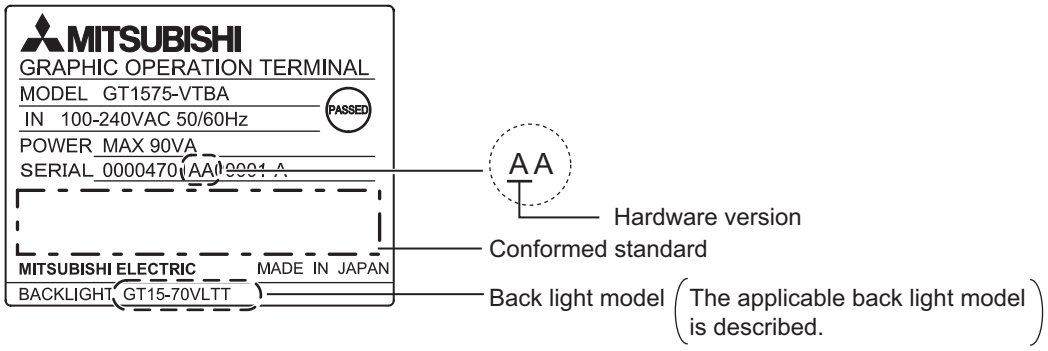




Unit : mm (inch)

Appendix 2 Confirming of GOT's Hardware Version

The hardware version of the applicable GOTs is indicated on the rating plate of the GOT rear face.



Appendix 3 Usage Condition of Utility Function

The function which can be used differs according to the GOT type.
Moreover, there are the function which can be set with drawing software and the function which cannot be set.

○: Applicable ×: N/A

Item		Functions overview	GT15	GT11	Drawing Setting
GOT setup: Communication setting *1		Setting of channel number for the communication interface and assignment of communication driver	○	○	○
	Detail settings	Setting of communication parameter	○	○	○
		Sequence program protection key word setting (When FX series PLC is connected)	○	○	×
		Sequence program protection key word deleting (When FX series PLC is connected)	○	○	×
		Sequence program protection status cancel (When FX series PLC is connected)	○	○	×
GOT setup: Display		Setting of opening screen time	○	○	○
		Setting of screen saving time	○	○	○
		Setting of screen saving back light ON/OFF	○	○	○
		Switching message language (Japanese/English)	○	○	○
		Human sensor Effective/Invalid setting	○	×	×
		Sensor detect level setting	○	×	×
		Displaying sensor detect time	○	×	×
		Sensor off delay setting	○	×	×
	Brightness, contrast	Liquid crystal intensity setting	○	○	×
		Liquid crystal contrast setting	×	○	×

○: Applicable ×: N/A

Item			Functions overview	GT15	GT11	Drawing Setting
GOT setup	Operation		Setting of buzzer volume	○	○	○
		Security setting *2	Security level change (security password input of each object)	○	○	×
		Utility call key	Setting of the menu call key	○	○	○
		Key sensitivity	Setting key sensitivity	○	○	×
		Key reaction speed	Displaying key reaction speed	○	○	×
		Touch panel calibration	Correcting touch position reading error	○	×	×
	Q/QnA ladder monitor		Setting of data storage location for the MELSEC-Q/QnA ladder monitoring function	○	×	○
	Transparent mode settings		Setting communication target channel Nos. when the FA transparent function is used.	○	×	○
Time setting & display *3			Selection of base clock	○	○	○
			Display current time of clock.	○	○	×
			Set current time of clock.	○	○	×
			Display of battery status	○	○	×

*1: It is necessary to carry out the following items by GT Designer2
- Installation of communication driver
- Allocation of channel number and communication driver

*2: It is necessary to set the security level by GT Designer2

*3: If necessary please install the battery.

○: Applicable ×: N/A

Item			Functions overview	GT15	GT11	Drawing Setting
Program/data control	OS information		Installing OS	○	○	×
			Uploading OS	○	○	×
			Property display of OS (Kind, version, and date)	○	○	×
			Data check of system file (OS)	○	○	×
	Project Information		Downloading project file	○	○	×
			Uploading project file	○	○	×
			Project file deleting	○	○	×
			Copying project file (A drive → A drive)	○	○	×
			Property display of project file (Date, version and screen title)	○	○	×
			Data check of project file	○	○	×
Program/data control	Alarm information		Deleting alarm log file	○	×	×
			Copying alarm log file	○	×	×
			G1A → CSV conversion (Convert from G1A of the alarm file to CSV)	○	×	×
			G1A → TXT conversion (Convert from G1A of the alarm file to TXT)	○	×	×
		Historical graph display	Displaying historical graph of alarm file	○	×	×
		Tally graph display	Tally graph display of alarm file	○	×	×
	Advanced Recipe information		G1P → CSV conversion (Convert from G1P of the advanced recipe file to CSV)	○	×	×
			G1P → TXT conversion (Convert from G1P of the advanced recipe file to TXT)	○	×	×
			Deleting advanced recipe file or folder	○	×	×
			Copying advanced recipe file	○	×	×
			Moving advanced recipe file or folder	○	×	×
			Changing advanced recipe folder name	○	×	×
			Creating a new advanced recipe folder or file	○	×	×
		Advanced Recipe Record List	Loading record data	○	×	×
			Saving record data	○	×	×
			Matching record data	○	×	×
			Deleting device data	○	×	×

○: Applicable ×: N/A

Item		Functions overview	GT15	GT11	Drawing Setting
Program/data control	Logging information	G1L → CSV conversion (Convert from G1L of the logging file to CSV)	○	×	×
		G1L → TXT conversion (Convert from G1L of the logging file to TXT)	○	×	×
		Deleting logging file or folder	○	×	×
		Copying logging file	○	×	×
		Moving logging file	○	×	×
		Changing logging file name	○	×	×
		Creating a new logging folder or file	○	×	×
	Hard copy information	Deleting hard copy file	○	×	×
		Copying hard copy file	○	×	×
	Memory card format	Formatting memory card	○	○	×
	Memory information	Displaying memory space of GOT	○	○	×
	Special data information	Displaying file/folder name, data size and creation date and time	○	×	×
		Deleting file or folder of special data	○	×	×
		Checking file of special data	○	×	×
		Downloading special data written in the A drive (Standard CF card) to C drive (Built-in flash memory)	○	×	×

○: Applicable ×: N/A

Item			Functions overview	GT15	GT11	Drawing Setting
Debug & self check	Debug	System monitor	Monitoring and testing PLC devices, monitoring and changing values in the special module buffer memory	○	○	×
		Ladder monitor	Displaying ladder monitor, executing hard copy	○	×	×
		A List editor	Changing sequence programs or parameters of the ACPU	○	○	×
		FX list editor	Editing sequence programs of the FXCPU in a list	○	○	×
		Intelligent module monitor	Monitoring or changing data of intelligent function module buffer memory on the dedicated screen, monitoring signal statuses of an I/O module	○	×	×
		Network monitor	Monitoring the network status of MELSECNET/H, MELSECNET/10, MELSECNET (II), MELSECNET/B	○	×	×
		Motion monitor	Monitoring servos of motion controller CPU (Q series), setting parameters	○	×	×
		Servo amplifier monitor	Executing various monitoring functions of servo amplifier, changing parameters, testing operations	○	×	×
		CNC monitor	Executing position display monitor, alarm diagnosis monitor, tool offset/param, program monitor, etc. equivalent to the MELDAS dedicated display	○	×	×
	Self check	Memory check	A drive (Standard CF card) memory check	○	○	×
			C drive (Built-in Flash Memory) memory check	○	○	×
			D drive (Built-in SRAM) memory check	×	○	×
		Drawing check	Liquid crystal missing bits check, color check, drawing check, display check and overlapping display check	○	○	×
		Font check	Installed fonts check	○	○	×
		Touch panel check	Touch panel operation check	○	○	×
		I/O check	Connecting target check	○	○	×
			Self-loopback check*4	○	○	×
Clean	Clean		Display the screen to clean the display section.	○	○	×
Maintenance timing setting	Maintenance timing setting *5		Black light maintenance timing setting.	○	×	×
			Display section maintenance time notification period setting.	○	×	×
			Setting of touch key maintenance notification count.	○	×	×
			Setting of Built-in flash memory maintenance notification count.	○	×	×
Addition times reset	Addition times reset *5		Function to reset the value of the backlight maintenance notification time, display section maintenance notification time, touch key maintenance notification count, built-in flash memory maintenance notification count which has been additioned for the maintenance report function.	○	×	×

*4: It is necessary to install the RS-232 connector for the test. (☞ 14.7 I/O Check)

*5: It is necessary to install the option function board and the battery.

Appendix 4 Transportation Precautions

When transporting lithium batteries, make sure to treat them based on the transport regulations.

Appendix 4.1 Relevant models

The battery for the GOT1000 Series is classified as shown in the table below.

Product name	Model	Description	Handled as
Battery for GOT1000 Series	GT15-BAT	Lithium battery	Non-dangerous goods

Appendix 4.2 Transportation guidelines

Products are packed properly in compliance with the transportation regulations prior to shipment. When repacking any of the unpacked products to transport it to another location, make sure to observe the IATA Dangerous Goods Regulations, IMDG Code and other local transportation regulations.
For details, please consult your transportation company.

Appendix 5 List of Functions Added by GT Designer2 Version Upgrade (For GOT1000 Series)

The following describes the functions added by version upgrade of the GT Designer2 Version2.17T.
For using the following functions, use GT Designer2 or OS of the corresponding version or later.

1 Added GOT main unit

Target Models	Version of GT Designer2	Version of OS
GT1595-XTBA	2.18U	Standard monitor OS [02.02.**]
GT1585-STBD	2.18U	Standard monitor OS [02.02.**]
GT1575-STBD	2.18U	Standard monitor OS [02.02.**]
GT1575-VTBD	2.18U	Standard monitor OS [02.02.**]
GT1575-VNBA, GT1575-VNBD, GT1572-VNBA, GT1572-VNBD	2.18U	Standard monitor OS [02.02.**]
GT1565-VTBD	2.18U	Standard monitor OS [02.02.**]
GT1562-VNBA, GT1562-VNBD	2.18U	Standard monitor OS [02.02.**]
GT1155-HS-QSBD to GT1150-HS-QLBD	2.18U	Standard monitor OS [02.02.**]

2 Added connection types

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
Bus connection	Supporting connection to Q172HCPU, Q173HCPU	2.09K	Communication driver Bus(Q) [01.02.**]	○	×
Direct connection to CPU	Supporting connection to Q172HCPU, Q173HCPU	2.09K	Communication driver A/QnA/QCPU,QJ71C24 [01.02.**]	○	○
	Supporting connection to FX3U series	2.18U	Communication driver MELSEC-FX[02.02.**]	○	○
Computer link connection	Supporting connection to Q172HCPU, Q173HCPU	2.09K	Communication driver A/QnA/QCPU,QJ71C24 [01.02.**]	○	○
MELSECNET/10 connection (PLC to PLC network)	Supporting connection to MELSECNET/10 PLC to PLC connection)	2.09K	Communication driver MELSECNET/10 [01.02.**]	○	×
	Supporting connection to Q172HCPU, Q173HCPU				
CC-Link connection (Intelligent device station)	Supporting connection to CC-Link (Intelligence device station)	2.09K	Communication driver CC-LINK(ID) [01.02.**]	○	×
	Supporting connection to Q172HCPU, Q173HCPU				

(Continued to next page)

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
CC-Link connection (Via G4)	Supporting connection to CC-Link (Via G4)	2.09K	Communication driver CC-LINK(G4) [01.02.**]	○	○
	Supporting connection to Q172HCPU, Q173HCPU				
Ethernet connection	Supporting connection to the Ethernet	2.09K	Communication driver QJ71E71/AJ71(Q)E71 [01.02.**]	○	×
	Supporting connection to Q172HCPU, Q173HCPU				
OMRON PLC connection	Extended device range monitored (The setting of TIM or CNT up to 4095, etc.)	2.09K	Communication driver OMRON SYSMAC [01.02.**]	○	○
KEYENCE PLC connection	Supporting connection to KEYENCE PLC	2.18U	Communication driver KEYENCE KV700/1000 [02.02.**]	○	○
SHARP PLC connection	Supporting connection to SHARP PLC	2.09K	Communication driver SHARP JW [01.02.**]	○	○
TOSHIBA PLC connection	Supporting connection to TOSHIBA PLC	2.09K	Communication driver TOSHIBA PROSEC T/V [01.02.**]	○	○
HITACHI PLC connection	Supporting connection to HITACHI PLC	2.09K	Communication driver HITACHI HIDIC H [01.02.**] HITACHI HIDIC H (Protocol 2) [01.02.**]	○	○
MATSUSHITA PLC connection	Supporting connection to MATSUSHITA PLC	2.09K	Communication driver MATSUSHITA MEWNET-FP [01.02.**]	○	○
	Supporting connection to FP-Σ	2.18U	Communication driver MATSUSHITA MEWNET-FP [02.02.**]	○	○
Allen-Bradley PLC connection	Can use L device by MicroLogix 1000/1200/ 1500 series	2.18U	Communication driver AB MicroLogix [02.02.**]	○	○
SIEMENS PLC connection	Supporting connection to SIEMENS S7-200 series	2.18U	Communication driver SIEMENS S7-200 [02.02.**]	○	○
OMRON temperature controller connection	Supporting connection to OMRON temperature controller	2.18U	Communication driver OMRON THERMAC / INPANEL NEO [02.02.**]	○	○
YAMATAKE temperature controller connection	Supporting connection to YAMATAKE temperature controller	2.18U	Communication driver YAMATAKE SDC/DMC [02.02.**]	○	○
RKC temperature controller connection	Supporting connection to RKC temperature controller	2.18U	Communication driver RKC SR Mini HG(MODBUS) [02.02.**]	○	○
Inverter connection	Supporting connection to inverter	2.18U	Communication driver FREQROL 500/700 [02.02.**]	○	○
CNC connection	Supporting connection to CNC	2.18U	Communication driver A/QnA/QCPU, QJ71C24, MELDAS C6* [02.02.**] A/QnAQJ71E71/AJ71(Q)E71 [02.02.**] MELSECNET/10 [02.02.**] CC-Link(ID) [02.02.**]	○	○

(Continued to next page)

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
Servo amplifier connection	Supporting connection to servo amplifier	2.09K	Communication driver MELSERVO-J2S/M [01.02.**]	○	○
	Supporting connection to MELSERVO-J3 series	2.18U	Communication driver MELSERVO-J3,J2S/M [02.02.**]	○	○
Bar code reader connection	Supporting connection to barcode reader	2.09K	Extended function OS Barcode [01.02.**]	○	○
FA transparent	Supporting the FA transparent function via USB	2.09K	GT15 Standard monitor OS [01.02.**] GT11 Standard monitor OS [01.02.**] Boot OS [01.02.**.C]	○	○
Multiple-GT11 connection	Connection with multiple GT11s	2.09K	Standard monitor OS [01.02.**]	×	○

3 Added GT Designer2 functions

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
Ethernet download	Downloading the project data via Ethernet	2.09K	Standard monitor OS [01.02.**]	○	×
Basic comment, comment group	Copying comments in column unit on Basic Comment or Comment Group, etc.	2.09K	—	○	○
Library workspace	Improved library structure and added import function	2.09K	—	○	○
	Improved user library structure, expanded the user library registration capacity, copying the figure data to the user library, etc.	2.18U	—	○	○
	Addition of fixed frame figure	2.18U	—	○	○
Project data matching	Matching project data stored in GOT and project data opened on GT Designer2	2.09K	Standard monitor OS [01.02.**]	○	○
Copy ON → OFF Copy OFF → ON	Enables copying of only characters in lamp display, touch switch and comment display.	2.18U	—	○	○
Import, Export	Enables editing of the settings for advanced alarm observation (advanced user alarm), alarm history, advanced recipe function and recipe function in the CSV file format and other format.	2.18U	—	○	○
Print	Enables printing of header and footer	2.18U	—	○	○
Data View	Enables changing of the settings for the respective objects in grouped objects	2.18U	—	○	○
Batch Edit	Enables global replacement of channel No.	2.18U	—	○	×
Screen Preview	Enables checking for security level switching and language switching in image after switching	2.18U	—	○	○
Wizard	Wizard for setting the GOT type, controller type and communication settings when creating a new project	2.18U	—	○	○

4 Added common settings/object functions

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
Figure	JPEG file reading enabled	2.09K	Standard monitor OS [01.02.**]	○	×
Text	Windows® fonts applicable	2.09K	Standard monitor OS [01.02.**]	○	○
KANJI Region	Supporting Chinese (Traditional)	2.18U	Standard monitor OS [02.02.**] Option OS Standard font (Chinese: Traditional) [02.02.**]	○	×
GOT Type	Supporting vertical installation type display	2.18U	Standard monitor OS [02.02.**]	×	○
Station No. Switching Function	Designation of the channel No. for which station No. is switched is possible.	2.18U	Standard monitor OS [02.02.**]	○	×
Language Switching Device	Language switching device can be used.	2.00A	Standard monitor OS [01.00.**]	○	×
		2.18U	Standard monitor OS [02.02.**]	○	○
Password Setting	Password can be set for the connection of motion controller and servo amplifier.	2.18U	Standard monitor OS [02.02.**]	○	○
GOT Setup	In clock management, both adjust and broadcast can be set.	2.18U	Standard monitor OS [02.02.**]	○	○
	Data save device of MELSEC-Q / QnA ladder monitor data can be set at GT Designer2.	2.18U	—	○	×
	Time setting for call key ON until the start up of utility can be set (for 1-point pressing).	2.18U	Standard monitor OS [02.02.**]	○	×
Clock Setting	Designation of the channel No. used for adjusting and broadcasting is possible.	2.18U	Standard monitor OS [02.02.**]	○	×
Startup Logo	Function for setting any screen for the GOT startup screen	2.09K	Standard monitor OS [01.02.**] Boot OS [01.02.**.C]	○	○
Handy GOT Setting	Setting of the grip switch LED of handy GOT	2.18U	Standard monitor OS [02.02.**]	×	○
Comment	Comment group can be used.	2.00A	Standard monitor OS [02.02.**]	○	×
		2.18U	Standard monitor OS [02.02.**]	○	○
Key Window	User defined key window display can be switched in synchronization with the language switching device.	2.18U	Standard monitor OS [02.02.**]	○	○
	In the user defined key window, input range (maximum value) and input range (minimum value) are displayed.	2.18U	Standard monitor OS [02.02.**]	○	○
Lamp	Windows® fonts applicable	2.09K	Standard monitor OS [01.02.**]	○	○
Touch switch	Windows® fonts applicable	2.09K	Standard monitor OS [01.02.**]	○	○
ASCII Display / ASCII Input	Function to store NULL (0x00) at the end of input characters	2.18U	Standard monitor OS [02.02.**]	○	○
	Function to convert characters input in Kana into Kanji	2.18U	Standard monitor OS [02.02.**] Option OS KANA KANJI (JP) [02.02.**]	○	×
Advanced Alarm	Function for detecting alarm even at the fall of bit device with Advanced User Alarm	2.09K	Standard monitor OS [01.02.**]	○	×

(Continued to next page)

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
Parts Display	Function for using BMP/JPEG data in memory card as parts	2.09K	Standard monitor OS [01.02.**]	○	×
Parts Movement		2.09K	Standard monitor OS [01.02.**]	○	×
Panelmeter	Windows® fonts applicable	2.09K	Standard monitor OS [01.02.**]	○	○
Historical Trend Graph	Function to display the data collected by the logging function in trend graph format	2.18U	Standard monitor OS [02.01.**]	○	×
Logging Function	Function to collect and accumulate device values	2.18U	Standard monitor OS [02.02.**] Option OS Logging [02.02.**]	○	×
Advanced Recipe	The extended function of the existing recipe function	2.09K	Standard monitor OS [01.02.**] Option OS Advanced recipe [01.02.**]	○	×
Barcode	Function for loading the data read with bar cord reader to PLC CPU	2.09K	Standard monitor OS [01.00.**]	○	○
Test function	Function for changing device value with displaying test window.	2.09K	Standard monitor OS [02.02.**]	○	○
Project Script	Function to execute scripts in unit of project file	2.00A	Standard monitor OS [01.00.**]	○	×
		2.18U	Standard monitor OS [02.02.**]	○	○
Screen Script	Function to execute scripts in unit of screen	2.00A	Standard monitor OS [01.00.**]	○	×
		2.18U	Standard monitor OS [02.02.**]	○	○
Object Script	Function to execute scripts in unit of object	2.18U	Option OS Object Script [02.02.**]	○	×
Key Code	Key codes for increment key and decrement key are added.	2.18U	Standard monitor OS [02.02.**]	○	○
	Key code for historical trend graph is added.	2.18U	Standard monitor OS [02.02.**]	○	×
	Key code used for Kana Kanji conversion is added.	2.18U	Standard monitor OS [02.02.**]	○	×

5 Other functions added

Item	Description	Version of GT Designer2	Version of OS	GT 15	GT 11
Unlimited installation of extended function OSs and option OSs	Extended function OS and option OS can be installed unlimitedly. (Conventionally, the limit was 10.)	2.18U	BootOS [02.02.**.E]	○	×
System monitoring function	Function for monitoring/testing device of PLC CPU or buffer memory of intelligent function module	2.09K	Extended function OS System monitor [01.02.**]	○	○
Network monitor function	Function to monitor the network status of MELSECNET/H, MELSECNET/10, etc.	2.18U	Option OS Network monitor [02.02.**]	○	×
Ladder monitoring function	Function for displaying sequence program loaded to CPU on GOT	2.09K	Option OS Ladder monitor for MELSEC-A [01.02.**] Ladder monitor for MELSEC-Q/QnA [01.02.**] Ladder monitor for MELSEC-FX [01.02.**]	○	×
Intelligent module monitor function	Function to monitor and change the data of intelligent function module buffer memory using a dedicated screen	2.18U	Option OS Intelligent module monitor [02.02.**]	○	×
List editor for MELSEC-A	Function for displaying/editing sequence program saved from ACPU with list mode	2.09K	Option OS List editor for MELSEC-A [01.02.**]	○	○
List editor for MELSEC-FX	Function to display / edit the sequence program read out from the FXCPU in the list mode	2.18U	Option OS List editor for MELSEC-FX [02.02.**]	○	○
Servo amplifier monitor function	Function to monitor the servo amplifier and also to change parameters, execute test run, etc.	2.18U	Option OS Servo amplifier monitor [02.02.**]	○	×
Q motion monitor function	Function to execute servo monitor and parameter setting for motion controller CPU (Q series)	2.18U	Option OS Q motion monitor [02.02.**]	○	×
CNC monitor function	Function to monitor position display, alarm diagnosis and program and to check tool offset data at the same level as with the dedicated MELDAS display unit.	2.18U	Option OS CNC monitor [02.02.**]	○	×
Multi-channel function	Function to monitor multiple controllers with a single unit of GOT	2.18U	Standard monitor OS [02.02.**] Communication driver Use the communication driver, [02.02.**] or later for each connection.	○	×
Gateway function	Function for monitoring each controller from one GOT/PC or sending a mail from GOT	2.09K	Option OS Gateway function (Mail) [01.02.**] Gateway function (Server, Client) [01.02.**]	○	×
	Supporting the FTP server function	2.18U	Option OS Gateway functionFTP [02.02.**]	○	×

MEMO

INDEX

[A]

A list editor 14-1
Addition times reset for maintenance time notification 17-1
  Addition times reset function 17-1
  Display operation of addition times reset 17-1
  Operation of Addition times reset 17-2
Advanced Recipe Information 13-44
Alarm information 13-28
  Alarm information operation 13-30
  Function of alarm information 13-28
  The display operation of alarm information 13-28
Attachment 2-10,8-27
  Applicable attachment 8-27
  Installing procedure 8-27

[B]

Backlight 2-10,19-6
  Backlight replacement 19-6
  Backlight shutoff detection and replacement 19-5
Bar code reader 2-8
Basic operation of settings change 9-10
Basic OS 9-1
Battery 2-9,8-21
  Applicable battery 8-21
  Battery life 8-22
  Battery replacement procedure 8-21
  Battery specifications 8-21
  Battery voltage low detection and battery replacement 19-4
Battery status display 12-1
  GOT internal battery status display 12-5
Boot OS 9-1,18-1
Brightness, contrast adjustment 11-11
  Brightness adjustment function 11-11
  Display operation of brightness, contrast 11-11
Buffer circuit cable 2-7
Bus connection unit 2-5,8-8
Bus connector conversion box 2-5
Bus extension connector box 2-5

[C]

CC-Link communication unit 2-5,8-8
CF card 2-8,8-1
  Applicable CF card 8-1
  Installing and removing procedures of the CF card 8-2
Clean 15-1
  Cleaning method 19-3
  Display operation of clean 15-1
  Operation of clean 15-2
Cleaning of display section 15-1
Communication detail settings 10-12
  Communication detail settings display operation 10-12
  Communication detail settings functions 10-12
  Display contents of communication detail settings 10-14
  Key word registration, deletion and protection delete 10-15
Communication interface setting 10-1
Communication setting 10-1
  Communication setting contents 10-2
  Communication setting display operation. 10-1,10-7
  Communication setting functions 10-1
Communication unit 2-5,8-8
  Applicable communication unit 8-8
  Installing procedure 8-9
Component list 2-2
Control panel inside dimensions for mounting GOT 6-1
Control panel inside temperature and mounting angle 6-3

[D]

Daily inspection 19-2
Display and operation settings 11-1
  Display operation of display setting 11-5
  Display setting functions 11-2
  Display setting operations 11-6
Drawing check 14-7
  Display operation of drawing check 14-7
  Drawing check function 14-7
  Drawing check operation 14-8
Drawing software 2-10

[E]

EMC AND LOW VOLTAGE DIRECTIVE 5-1
Error message and system alarm 20-1
  List of error message/system alarm 20-3
Ethernet communication unit 2-5,8-8
Explanation of the GOT model name 2-2
Explanation of the option model name 2-2
External dimensions App-1

[F]

File display and copy 13-1
  Capacity confirmation of the project data downloading location 13-6
  Data type and the storage location 13-2
  Display file 13-7
  Drive name allocation 13-1
  OS version confirmation 13-4
Font check 14-12
  Display operation of font check 14-12
  Font check function 14-12
  Font check operation 14-13

[G]

General specifications 3-1
GOT self check 14-1
GOT set up 11-1
GOT-to-GOT connection cable 2-6
GOT-to-GOT long distance connection cable 2-6
GT Designer2 2-10

[H]

Hard copy information 13-36
The display operation of hardcopy information 13-36
The function of hardcopy information 13-36
The operation of hardcopy information 13-38

[I]

I/O check 14-16
Display operation of I/O check 14-16
I/O check function 14-16
I/O check operation 14-17
Installation of boot OS and standard OS 18-1
Boot OS and standard OS installation using CF card 18-4
Boot OS and standard OS required for installation 18-2
Prior preparations for installing boot OS and standard OS 18-3
Program / data control function 18-6
The 2-point presses installation function 18-5
When installing the different version of boot OS, standatd OS 18-8
Installation procedure 6-3
Interface converter unit 2-5,8-8

[L]

Ladder monitor 14-1
Large-size CPU extension cable 2-7
Logging information 13-67

[M]

Maintenance time notification setting 16-1
Display operation of maintenance timimg setting 16-3
Maintenance time notification function 16-2
Operation of maintenance time notification 16-4
MELSECNET/10 communication unit 2-5,8-8
Memory card adaptor 2-8,8-5
Applicable memory card adaptor 8-5
Installing procedure of the CF card into a memory card adaptor 8-5
Memory card format 13-41
Display operation of memory card format 13-41
Format operation of memory card 13-42
Memory card format 13-41
Memory check 14-4
Display operation of memory card 14-4
Memory check function 14-4
Memory check operation 14-5
Memory information 13-81
Mounting position 6-2
Multi color display board 2-9,8-7
Applicable multi-color display board 8-7
Installing procedure of the multi-color display board 8-7

[O]

Operation settings 11-13
Display operation of display setting 11-14
Operation setting functions 11-13
Setting operation of operation 11-15
Option 2-4
Option function board 2-8,8-6
Applicable option function board 8-6
Installing procedure of the option function board 8-6
OS Information
Display operation of OS information 13-10
OS information 13-10
Function of OS information 13-10
Operation of OS information 13-12
Overall configuration 2-1

[P]

Packing list A-21
Panel cutting dimensions 6-1
Part names and settings of the GT156□ 4-7
Part names and settings of the GT157□ 4-5
PC connection cable 2-10
Performance specifications 3-2
Periodic inspection 19-2
PLC connection cable 2-4
Power supply specifications 3-10
Power supply wiring 7-2
Grouding 7-4
Power supply connection 7-6
Wiring of connection cables 7-3
Program/data control 13-1
Project information 13-17
Display operation of project information 13-17
Function of OS information 13-17
Operation of project information 13-19
Protective sheet 2-9,8-23
Applicable protective sheet 8-23
Installing procedure 8-24

[Q]

Q extension cable 2-6
Q long distance connection cable 2-6
Q/QnA ladder monitor setting 11-25
QCPU (Q mode) bus connection cable 2-6
QnA/ACPU/Motion controller (A series) bus connection cable 2-7

[R]

Rough pre-operation procedure 1-5
RS-232 cable 2-4

RS-422 cable 2-4
RS-422 conversion unit 2-5,8-20
Applicable RS-422 conversion unit 8-20
Installing procedure 8-20

[S]

Screen data transfer cable 2-10
Security level change 11-17
Security change display operation 11-17
Security level change functions 11-17
Security level change operation 11-18
Small-size CPU extension cable 2-7
Small-size CPU long distance connection cable ... 2-7
Special Data Information 13-83
Stand 2-9,8-26
Applicable stand 8-26
Installing procedure 8-26
Standard OS 18-1
System configuration 2-1
System monitor 14-1

[T]

Time setting and display 12-1
Clock setting operations 12-2
Display operation of clock display and setting . 12-1
Time setting and display functions 12-1
Touch panel calibration 11-22
Touch panel check 14-14
Display operation of touch panel check 14-14
Touch panel check function 14-14
Touch panel check operations 14-15
Transparent function setting 11-28
Transportation Precautions App-15
Troubleshooting
Troubleshooting for monitoring 20-15
Troubleshooting in bus connection 20-12

[U]

Usage condition of utility function App-10
USB cable 2-4
USB environmental protection cover 8-25
Applicable USB environmental protecton cover 8-25
Installing procedure 8-25
Utility basic configuration 9-9
Utility call key setting 11-19
Utility call key display operation 11-19
Utility call key setting function 11-19
Utility call key setting operation 11-20
Utility display 9-5
Display operation of main menu 9-6
Main menu 9-5
Password 9-7
System message switch button 9-5
Utility execution 9-1
Utility function list 9-2

WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company. However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

(1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.

(2) Even within the gratis warranty term, repairs shall be charged for in the following cases.

1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
2. Failure caused by unapproved modifications, etc., to the product by the user.
3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Onerous repair term after discontinuation of production

(1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.

(2) Product supply (including repair parts) is not available after production is discontinued.

3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

6. Product application

(1) In using the Mitsubishi graphic operation terminal, the usage conditions shall be that the application will not lead to a major accident even if any problem or fault should occur in the graphic operation terminal device, and that backup and fail-safe functions are systematically provided outside of the device for any problem or fault.

(2) The Mitsubishi graphic operation terminal has been designed and manufactured for applications in general industries, etc. Thus, applications in which the public could be affected such as in nuclear power plants and other power plants operated by respective power companies, and applications in which a special quality assurance system is required, such as for Railway companies or Public service purposes shall be excluded from the graphic operation terminal applications.
In addition, applications in which human life or property that could be greatly affected, such as in aircraft, medical applications, incineration and fuel devices, manned transportation equipment for recreation and amusement, and safety devices, shall also be excluded from the graphic operation terminal range of applications.
However, in certain cases, some applications may be possible, providing the user consults their local Mitsubishi representative outlining the special requirements of the project, and providing that all parties concerned agree to the special circumstances, solely at the users discretion.

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GRAPHIC OPERATION TERMINAL

GOT1000

GT15 User's Manual

MODEL	GT15-U(SHO)-E
MODEL CODE	1D7M23
SH(NA)-080528ENG-D(0510)MEE	

MITSUBISHI ELECTRIC CORPORATION

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